

Asbestos Part 1: Chrysotile Asbestos; Regulation of Certain Conditions of Use Under Section 6(a) of the Toxic Substances Control Act (TSCA)

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Content

Action

Proposed rule.

Summary

The Environmental Protection Agency (EPA) is proposing a rule under the Toxic Substances Control Act (TSCA) to address the unreasonable risk of injury to health it has identified for conditions of use of chrysotile asbestos following completion of the TSCA Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos. TSCA requires that EPA address the unreasonable risks of injury to health and environment by rule and to apply requirements to the extent necessary so that chrysotile asbestos no longer presents such risks. Therefore, to address the unreasonable risk identified in the TSCA Risk Evaluation for Asbestos, Part 1 from chrysotile asbestos, EPA is proposing to prohibit manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos for chrysotile asbestos diaphragms for use in the chlor-alkali industry, chrysotile asbestos-containing sheet gaskets used in chemical production, chrysotile asbestos-containing brake blocks used in the oil industry, aftermarket automotive chrysotile asbestos-containing brakes/linings, other chrysotile asbestos-containing vehicle friction products, and other chrysotile asbestos-containing gaskets. EPA also is proposing to prohibit manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use, and other chrysotile asbestos-containing gaskets for consumer use. EPA is also proposing disposal and recordkeeping requirements for these conditions of use.

Dates

Comments must be received on or before June 13, 2022.

Addresses

Submit your comments, identified by docket identification (ID) number EPA-HQ-OPPT-2021-0057, using the Federal eRulemaking Portal at <https://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Due to the public health concerns related to COVID-19, the EPA Docket Center (EPA/DC) and Reading Room is open to visitors by appointments. For the latest status information on EPA/DC services and docket access, visit <https://www.epa.gov/dockets>.

For Further Information Contact

For technical information contact: Peter Gimlin, Existing Chemicals Risk Management Division (7405M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460-0001; telephone number: (202) 566-0515; email address: Gimlin.peter@epa.gov.

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

Supplementary Information

I. Executive Summary

A. Does this action apply to me?

You may be potentially affected by this proposed action if you manufacture (including import), process, distribute in commerce, use, or dispose of chrysotile asbestos. TSCA section 3(9) defines the term “manufacture” to mean to import into the customs territory of the United States (as defined in general note 2 of the Harmonized Tariff Schedule of the United States), produce, or manufacture. Therefore, unless expressly stated otherwise, importers of chrysotile asbestos are subject to any proposed provisions regulating manufacture of chrysotile asbestos. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Oil and Gas Extraction (NAICS code 211).
- Chemical Manufacturing (NAICS code 325).
- Fabricated Metal Product Manufacturing (NAICS code 332).
- Transportation Equipment Manufacturing (NAICS code 336).
- Gasket, Packing, and Sealing Device Manufacturing (NAICS code 339991).
- Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS code 4231).
- Motor Vehicle and Parts Dealers (NAICS code 441).
- Automotive Repair and Maintenance (NAICS code 8111).

This action may also affect certain entities through pre-existing import certification and export notification rules under TSCA. Persons who import any chemical substance governed by TSCA are subject to the TSCA section 13 (15 U.S.C. 2612) import certification requirements and the corresponding regulations at 19 CFR 12.118 through 12.127; see also 19 CFR 127.28. Those persons must certify that the shipment of the chemical substance complies with all applicable rules and orders under TSCA. The EPA policy in support of import certification appears at 40 CFR part 707, subpart B. In addition, any persons who export or intend to export a chemical substance that is the subject of this proposed rule are subject to the export notification provisions of TSCA section 12(b) (15 U.S.C. 2611(b)), and must comply with the export notification requirements in 40 CFR part 707, subpart D.

Asbestos (including chrysotile asbestos) is already subject to TSCA section 6(a) (40 CFR part 763, subparts G and I) rules that trigger the export notification provisions of TSCA section 12(b) (15 U.S.C. 2611(b); see also 40 CFR 721.20). Any person who exports or intends to export asbestos (including chrysotile asbestos) must comply with the export notification requirements in 40 CFR part 707, subpart D. Pursuant to TSCA section 12(a)(2), this proposed rule would apply to the chemical

substance, mixture, or article even if being manufactured, processed, or distributed in commerce solely for export from the United States because a determination has been made that the chemical substance, mixture, or article presents an unreasonable risk to health within the United States or to the environment of the United States.

If you have any questions regarding the applicability of this proposed action to a particular entity, consult the technical information contact listed under FOR FURTHER INFORMATION CONTACT .

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

Under TSCA section 6(a) (15 U.S.C. 2605(a)), if EPA determines through a TSCA section 6(b) risk evaluation that a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or other non-risk factors, including an unreasonable risk to a potentially exposed or susceptible subpopulation identified as relevant to the risk evaluation, under the conditions of use, EPA must by rule apply one or more requirements listed in section 6(a) to the extent necessary so that the chemical substance or mixture no longer presents such risk.

C. What action is the Agency taking?

EPA determined in the Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos (Ref. 1), that chrysotile asbestos presents an unreasonable risk of injury to health based upon the following conditions of use:

- Processing and Industrial use of Chrysotile Asbestos Diaphragms in the Chlor-alkali Industry;
- Processing and Industrial Use of Chrysotile Asbestos-Containing Sheet Gaskets in Chemical Production;
- Industrial Use and Disposal of Chrysotile Asbestos-Containing Brake Blocks in Oil Industry;
- Commercial Use and Disposal of Aftermarket Automotive Chrysotile Asbestos-Containing Brakes/Linings;
- Commercial Use and Disposal of Other Chrysotile Asbestos-Containing Vehicle Friction Products;
- Commercial Use and Disposal of Other Chrysotile Asbestos-Containing Gaskets;
- Consumer Use and Disposal of Aftermarket Automotive Chrysotile Asbestos-Containing Brakes/Linings;
- Consumer Use and Disposal of Other Chrysotile Asbestos-Containing Gaskets.

A detailed description of these conditions of use is provided in Unit III.B.2. Accordingly, to address the identified unreasonable risk, EPA is proposing pursuant to TSCA section 6(a) to prohibit manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk for or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and chrysotile asbestos-containing sheet gaskets used in chemical production. EPA is proposing that these prohibitions would take effect two years after the effective date of the final rule. EPA is also proposing pursuant to TSCA section 6(a) to prohibit manufacture (including import), processing, distribution in commerce, and commercial use of: Chrysotile asbestos-containing brake blocks used in the oil industry, aftermarket automotive chrysotile asbestos-containing brakes/linings, other chrysotile asbestos-containing vehicle friction products (not including the NASA Super Guppy Turbine aircraft use), and other chrysotile asbestos-containing gaskets. EPA is proposing that these prohibitions would take effect 180 days after the effective date of the final rule. EPA is further proposing pursuant to TSCA section 6(a) to prohibit manufacture (including import), processing, and distribution in commerce of: Aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use, and other chrysotile asbestos-containing gaskets for consumer use. EPA is proposing that these prohibitions

would take effect 180 days after the effective date of the final rule. EPA is also proposing disposal and recordkeeping requirements under which regulated parties would document compliance with certain proposed prohibitions. EPA does not intend the proposed prohibitions on processing or distribution in commerce to prohibit any processing or distribution in commerce incidental to disposal of the chrysotile asbestos waste in accordance with the proposed requirements.

EPA is requesting public comment on this proposal.

D. Why is the Agency taking this action?

Under TSCA section 6(a), “[i]f the Administrator determines in accordance with subsection (b)(4)(A) that the manufacture, processing, distribution in commerce, use or disposal of a chemical substance or mixture, or that any combination of such activities, presents an unreasonable risk of injury to health or the environment, the Administrator shall by rule . . . apply one or more of the [section 6(a)] requirements to such substance or mixture to the extent necessary so that the chemical substance no longer presents such risk.” Chrysotile asbestos was the subject of a risk evaluation under TSCA section 6(b)(4)(A) that was issued in December 2020 (Ref. 1). In that risk evaluation, EPA determined that chrysotile asbestos presents unreasonable risk of injury to health under certain conditions of use evaluated. As a result, EPA is proposing to take action to ensure that chrysotile asbestos no longer presents such risk for the chrysotile uses evaluated under part 1 of the risk evaluation. The unreasonable risk is described in Unit III.B.1. and the conditions of use that are the subject of this proposed regulation and that were found to drive the unreasonable risk in the Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos are described in Unit III.B.2.

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

EPA has prepared an Economic Analysis of the potential incremental impacts associated with this rulemaking that can be found in the rulemaking docket (Ref. 2).

1. Background

Asbestos usage in the nation has been declining for decades and current domestic consumption of raw asbestos is less than 0.1% of peak consumption in the early 1970s. Chlor-alkali producers are the only industry in the U.S. known to fabricate products from raw chrysotile asbestos. In addition, EPA has concluded that imports of a few asbestos-containing products are intended, known, or reasonably foreseen to occur; while the total quantity of asbestos in those products is uncertain, it is believed to be relatively small (see Appendix C of the Risk Evaluation).

2. Costs

Three firms own a total of ten chlor-alkali plants in the U.S. that still use asbestos diaphragms to produce chlorine and sodium hydroxide (also known as caustic soda). As one of these ten plants is expected to close in 2022, before the expected effective date of the final rule, EPA has only estimated the costs and benefits for the nine remaining plants that would be impacted by this rule. The nine remaining plants range in age from 40 to 123 years old, although some have had new capacity added as recently as 16 years ago, and others may have had recent refurbishments. The share of total production using asbestos diaphragm cells has been declining over time. The diaphragm cells in these plants currently represent about one-third of U.S. chlor-alkali production capacity. EPA's analysis supports a high probability that these firms will respond to the proposed rule by converting their asbestos diaphragm cells to membrane cells, which do not use asbestos. The use of membrane cells has increased over time and they currently account for nearly half of U.S. capacity. (The remaining capacity

uses non-asbestos diaphragms or other miscellaneous processes.) A more detailed discussion of the expected impacts of conversion from asbestos-containing diaphragm cells to membrane cells, which use an increased concentration of per- and polyfluoroalkyl substances (PFAS) compounds relative to the amount of PFAS compounds contained in asbestos-containing diaphragms, is located in Unit III.B.4.

Converting the asbestos diaphragm cells to membrane cells in response to the proposed rule is predicted to require an incremental investment of approximately \$1.8 billion across all nine plants predicted to be using asbestos diaphragms when the rule goes into effect. Membrane cells are much more energy efficient than diaphragm cells, so, despite the upfront capital cost, that conversion is expected to result in significant savings that would accrue over many years. The expected energy savings are included in the estimated net annualized costs. Membrane cells also produce a higher grade of caustic soda that has historically commanded a higher price than the product from diaphragm cells. EPA anticipates that most of the conversions to membrane cells would occur in the coming decades even without the proposed rule, following existing trends in the chlor-alkali industry to transition away from asbestos. Compared to this baseline trend, the incremental net effect of the proposed rule on the chlor-alkali industry over a 20-year period using a 3 percent discount rate is estimated to range from an annualized cost of about \$49 million per year to annualized savings of approximately \$35 million per year, depending on whether the higher grade of caustic soda produced by membrane cells continues to command a premium price. Using a 7 percent discount rate, the incremental annualized net effect ranges from a cost of \$87 million per year to savings of approximately \$40,000 per year, again depending on whether there are revenue gains from the caustic soda production.

EPA also estimates that approximately 1,800 sets of automotive brakes or brake linings containing asbestos may be imported into the U.S. each year, representing 0.002% of the total U.S. market for aftermarket brakes. The cost of a prohibition would be minimal due to the ready availability of alternative products that are only slightly more expensive (an average cost increase of \$4 per brake). The proposed rule is estimated to result in total annualized costs for aftermarket automotive brakes of approximately \$25,000 per year using a 3% discount rate and \$18,000 per year using a 7% discount rate.

EPA did not have information to estimate the costs of prohibiting asbestos for the remaining uses subject to the proposed rule (sheet gaskets used in chemical production, brake blocks in the oil industry, other vehicle friction products, or other gaskets), so there are additional unquantified costs. EPA believes that the use of these asbestos-containing products has declined over time, and that they are now used in at most small segments of the industries. For these remaining categories, EPA requests comment on the number of entities that manufacture (including import), process, distribute in commerce, or use products or articles containing asbestos. EPA also requests comment on the costs of the rule to these entities.

3. Benefits

EPA's Economic Analysis for the rule quantified the benefits from avoided cases of lung cancer, mesothelioma, ovarian cancer, and laryngeal cancer due to reduced asbestos exposures to workers, occupational non-users (ONUs), and DIYers related to the rule's requirements for chlor-alkali diaphragms, sheet gaskets for chemical production, and aftermarket brakes. The combined national quantified benefits of avoided cancer cases associated with these products are approximately \$3,100 per year using a 3% discount rate and \$1,200 per year using a 7% discount rate, based on the cancer risk estimates from the Part 1 risk evaluation. EPA did not estimate the aggregate benefits of the

requirements for oilfield brake blocks, other vehicle friction products or other gaskets because the Agency did not have sufficient information on the number of individuals likely to be affected by the rule. Thus, there may be additional unquantified benefits from reducing exposures associated with these uses.

There are also unquantified benefits due to other avoided adverse health effects associated with asbestos exposure including respiratory effects (*e.g.*, asbestosis, non-malignant respiratory disease, deficits in pulmonary function, diffuse pleural thickening and pleural plaques) and immunological and lymphoreticular effects.

In addition to the benefits of avoided adverse health effects associated with chrysotile asbestos exposure, the proposed rule is expected to generate significant benefits from reduced air pollution associated with electricity generation. Chlor-alkali production is one of the most energy-intensive industrial operations. Since membrane cells are more energy efficient than diaphragm cells, converting diaphragm cells to membrane cells reduces electricity consumption and thus the level of pollutants associated with electric power generation, including carbon dioxide, particulate matter, sulfur dioxide, and nitrogen oxides. Based on a sensitivity screening-level analysis that EPA conducted, converting asbestos diaphragm cells to membrane cells could yield tens of millions of dollars per year in environmental and health benefits from reduced emissions of particulate matter, sulfur dioxide, nitrogen oxides, and carbon dioxide. EPA's Economic Analysis, which can be found in the rulemaking docket (Ref. 2), contains more information on the potential magnitude of these monetized benefits from reduced criteria air pollutants and carbon dioxide emissions as well as caveats about the limitations of the screening-level analysis that EPA conducted.

4. Small Entity Impacts

As described in more detail in Unit VIII.C and in the Economic Analysis of this rulemaking (Ref. 2), EPA estimates that the proposed rule would affect at least 15 small entities, of which 12 are businesses supplying aftermarket brakes incurring costs between \$778 and \$11,523 per firm (depending on the number of brake replacements they perform). Nine of the brake replacement firms have a cost impact of less than 1% of their annual revenues. Of the three small entities estimated to be affected by the rule that are not supplying aftermarket brakes, two manufacture sheet gaskets for chemical production and one imports oilfield brake blocks. EPA was unable to estimate the magnitude of the impacts for these small entities. Chlor-alkali plants account for nearly all of the quantified costs of the rule, and none of the firms operating chlor-alkali plants are small businesses. No small businesses have been identified as using sheet gaskets for chemical production or brake blocks in the oil industry, but small businesses do supply these products to end users that are not small. Asbestos-free products in these applications reportedly do not last as long as items containing asbestos. As a result, the proposed rule could increase revenues for the affected small business suppliers if they sell a larger volume of non-asbestos products to the end users as replacements. For the remaining use categories (aftermarket automotive brakes, other gaskets, and other vehicle friction products), EPA has not identified firms (of any size) manufacturing, processing, distributing or using products containing asbestos. To the extent that there are any small businesses engaged in these activities, there are likely only a few firms facing a small cost increase for asbestos-free products, and any such cost increase can probably be passed on to consumers. EPA requests public comments regarding the number of small businesses subject to the rule, including use categories for which EPA did not identify any affected small businesses, and on the potential impacts of the rule on these small businesses.

5. Environmental Justice

This rule would increase the level of environmental protection for all affected populations without having any disproportionately high and adverse health or environmental effects on any population, including any minority or low-income populations. There are pre-existing environmental justice concerns in communities surrounding some of the affected chlor-alkali facilities and one other chemical manufacturer affected by this rule due to high levels of polluting industrial activities and a high proportion of minority residents. This rule is not expected to increase these pre-existing environmental justice concerns. Unit III.A.1 discusses outreach conducted to advocates of minority or low-income communities that might be subject to disproportionate exposure to chrysotile asbestos.

Both asbestos-containing diaphragm cells and membrane cells use per- and polyfluorinated substances (PFAS) compounds. EPA lacks information to determine whether this proposed regulation would increase usage and associated release of PFAS compounds at chlor-alkali facilities that currently rely on asbestos-containing diaphragms, chlor-alkali facilities that do not currently use asbestos-containing diaphragms that may expand their production as a result of the regulation, upstream facilities that produce membranes, or upstream facilities that produce PFAS fibers used in non-asbestos diaphragms.

6. Effects on State, Local, and Tribal Governments

This action has federalism implications because regulation under TSCA section 6(a) may preempt state law. It does not impose costs on small governments or have tribal implications.

II. Background

A. Overview of Chrysotile Asbestos

Asbestos is defined in section 202 of TSCA Title II as: “Asbestiform varieties of six fiber types—chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite or actinolite.” EPA used this definition of asbestos at the onset of the asbestos risk evaluation in 2016. However, EPA determined that chrysotile asbestos is the only type of asbestos where import, processing, and distribution in commerce for use is known, intended, or reasonably foreseen in the U.S. As such, EPA assessed these non-legacy conditions of use of chrysotile asbestos in the December 2020 Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos (Ref. 1). Following a decision by the Ninth Circuit Court of Appeals (*Safer Chemicals Healthy Families v. EPA*, 943 F.3d 397 (9th Cir. 2019)) concerning legacy use and associated disposal of asbestos, conditions of use that were not included in the Part 1 risk evaluation, EPA began developing a supplemental risk evaluation to address legacy and associated disposal conditions of use. The Risk Evaluation for Asbestos, Part 2: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos will include evaluation of those conditions of use of chrysotile asbestos, the five amphibole fiber types identified in the TSCA Title II definition (crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite and actinolite) and Libby Amphibole Asbestos (mainly consisting of tremolite, winchite, and richterite). Additionally, some talc deposits and articles containing talc have been shown to contain asbestos. Thus, it is recognized that certain uses of talc may present the potential for asbestos exposure. Where EPA identifies reasonably available information demonstrating the presence of asbestos in talc, where such talc applications fall under TSCA authority, those talc containing asbestos impurities will be evaluated in Part 2 of the risk evaluation for asbestos.

This proposed rule would only apply to chrysotile asbestos (Chemical Abstract Services Registry Number 132207-32-0). Chrysotile asbestos is a hydrated magnesium silicate mineral, with relatively long and flexible crystalline fibers that are capable of being woven. Chrysotile asbestos fibers used in

most commercial applications consist of aggregates and usually contain a broad distribution of fiber lengths. Chrysotile asbestos fiber bundle lengths usually range from a fraction of a millimeter to several centimeters, and diameters range from 0.1 to 100 μm . More information on the physical and chemical properties of chrysotile asbestos is in Section 1.1 of the Risk Evaluation (Ref. 1).

EPA evaluated the conditions of use associated with six ongoing use categories of chrysotile asbestos (chlor-alkali diaphragms, sheet gaskets used in chemical production, oilfield brake blocks, aftermarket automotive brakes/linings, other vehicle friction products, and other gaskets). There is no domestic mining of asbestos. All imported raw asbestos is chrysotile asbestos and is used in the manufacture of chlor-alkali diaphragms. According to the United States Geological Survey (USGS), 300 metric tons of chrysotile asbestos were imported in 2020 (Ref. 3).

B. Regulatory Actions Pertaining to Chrysotile Asbestos

Chrysotile asbestos is subject to numerous federal laws and regulations in the United States and is also subject to regulatory actions by states and other countries. The following is a summary of the laws and regulatory actions pertaining to chrysotile asbestos implemented by EPA, other federal agencies, states, and other countries or via international treaties and agreements. None of these actions addresses the unreasonable risks under TSCA that this proposed rule would address. For a full description see the Appendix A of the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos (Ref. 1).

1. EPA Actions Pertaining to Chrysotile Asbestos

EPA has taken the following actions pertaining to chrysotile asbestos under its various authorities:

- *Asbestos Hazard Emergency Response Act (AHERA)*: The Asbestos-Containing Materials in Schools regulation (40 CFR part 763, subpart E (1987)) requires local education agencies to inspect their school buildings for asbestos-containing building material, prepare asbestos management plans and perform asbestos response actions to prevent or reduce asbestos hazards. Public school districts and non-profit private schools, including charter schools and schools affiliated with religious institutions (collectively called local education agencies) are subject to the rule's requirements. AHERA defines asbestos as the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite-grunerite), anthophyllite, tremolite or actinolite.

- *Toxic Substances Control Act*: In 1989, EPA issued a final rule entitled *Asbestos: Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions; Final Rule*, (54 FR 29460 (1989)) banning most asbestos-containing products. In 1991, a federal court vacated and remanded most of the final rule, thereby permitting manufacture (including import), processing, or distribution in commerce for the majority of the asbestos-containing products. *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir., 1991). Manufacture (including import), processing, and distribution in commerce of the following products remain banned by the rule under TSCA: Corrugated paper, rollboard, commercial paper, specialty paper, and flooring felt. In addition, the 1989 rule continues to ban the manufacture (including import), processing, and distribution in commerce for use of asbestos in products that have not historically contained asbestos, referred to in the 1989 rule as “new uses” of asbestos, and defined by 40 CFR 763.163 as “commercial uses of asbestos not identified in part 763.165 the manufacture, importation or processing of which would be initiated for the first time after August 25, 1989.”

Through the authority of section 6 of TSCA, EPA extended worker protection requirements to state and local government employees involved in asbestos work who were not previously covered by existing Occupational Safety and Health Administration (OSHA) occupational health standards for asbestos through the *Asbestos Worker Protection Rule* (40 CFR part 763, subpart G (2000)).

- *Restriction on Discontinued Uses of Asbestos; Significant New Use Rule (SNUR)*. In 2019, EPA promulgated a significant new use rule under section 5(a)(2) of TSCA to ensure that any discontinued uses of asbestos cannot reenter commerce without prior EPA review (84 FR 17345, April 25, 2019). These new provisions at 40 CFR 721.11095 require persons subject to the rule to notify EPA at least 90 days before commencing any manufacturing (including importing) or processing of asbestos or asbestos-containing products covered under the rule. These uses are designated significant new uses and, as such, cannot be resumed unless EPA is notified and makes a required determination and takes action, as appropriate, under TSCA section 5.
- *Asbestos Information Act of 1988 (AIA)*: The AIA, Public Law 100-577, helped provide transparency and identify the companies making certain types of asbestos-containing products by requiring manufacturers to report production to the EPA.
- *Emergency Planning and Community Right-To-Know Act (EPCRA)*: Under Section 313, the Toxics Release Inventory (TRI) requires reporting of environmental releases of friable asbestos at a concentration level of 0.1% or greater. Also, within EPCRA, friable asbestos is designated as a hazardous substance subject to an Emergency Release Notification at 40 CFR 355.40 with a reportable quantity of 1 pound.
- *Clean Air Act*: Asbestos has been designated a hazardous air pollutant (HAP) under the CAA. In 1973, EPA promulgated the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) (40 CFR part 61, subpart M). The regulation requires, among other requirements, that some manufacturing and fabricating operations either cannot emit visible emissions into the outside air or must follow air cleaning procedures and generally must seal asbestos-containing waste material from regulated activities in a leak-tight container while wet, label, and dispose of properly in a landfill permitted to receive asbestos waste.
- *Clean Water Act (CWA)*: CWA defines asbestos as a toxic pollutant per 33 U.S.C. Section 1317. Each toxic pollutant listed in that section is subject to effluent limitations guidelines based on the best available technology economically achievable for the applicable category or class of point sources established in accordance with the CWA. The effluent limitations guidelines for the asbestos manufacturing point source category are in 40 CFR part 427.
- *Resource Conservation and Recovery Act (RCRA)*: RCRA gives EPA the authority to control hazardous wastes from cradle to grave, including generation, transportation, treatment, storage and disposal. Asbestos is not regulated as a hazardous waste under RCRA Subtitle C. Asbestos is a non-hazardous solid waste regulated under Subtitle D of RCRA. Regulations established under Subtitle D ban open dumping of waste and set minimum federal criteria for the operation of municipal waste and industrial waste landfills, including design criteria, location restrictions, financial assurance, corrective action (cleanup), and closure requirements. States play a lead role in implementing these regulations and may set more stringent requirements.

- *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*: The *Designation of Hazardous Substances Rule* (40 CFR 302.4) designates asbestos as a hazardous substance with a reportable quantity in Superfund regulations. The regulation also sets forth reportable quantities for asbestos under the Clean Water Act and the Resource Conservation and Recovery Act.

- *Safe Drinking Water Act*: Established *National Primary Drinking Water Regulations* (NPDWR) (40 CFR part 141, subpart G (1991)). NPDWR are enforceable drinking water standards expressed as Maximum Contaminant Levels (MCLs) or treatment techniques. The MCLs are the maximum level of contaminants that are allowed in public water systems in the United States. In 40 CFR 141.62, EPA set the maximum contaminant level for asbestos in community water systems and non-transitory, non-community water systems at 7 million fibers/liter (longer than 10 µm).

2. Other Pertinent Federal Actions Pertaining to Chrysotile Asbestos

Actions by other federal agencies related to chrysotile asbestos include:

- *Occupational Safety and Health Administration (OSHA)*. OSHA has established a permissible exposure limit (PEL) for asbestos of 0.1 fibers per cubic centimeter (cc) of air as an eight-hour time weighted average (TWA), with an excursion limit of 1.0 asbestos fibers per cubic centimeter over a 30-minute period. Among other requirements, OSHA requires assessments of workplaces covered by one of three standards (General Industry (29 CFR 1910.1001); Shipyards (29 CFR 1915.1001); Construction (29 CFR 1926.1101)) to be completed to determine if asbestos is present and if the work will generate airborne fibers. Further, monitoring is required to detect if asbestos exposure is at or above the PEL TWA or excursion limit for workers who are, or may be, expected to be exposed to asbestos. Monitoring frequency depends on work classification and exposure. Unit II.C. describes EPA's general approach to considering OSHA occupational health standards in TSCA risk evaluations and TSCA risk management actions.

- *The National Institute for Occupational Safety and Health (NIOSH)*, part of the U.S. Centers for Disease Control and Prevention, in the U.S. Department of Health and Human Services, is a research agency focused on the study of worker safety and health. NIOSH has established a Recommended Exposure Limit (REL) for asbestos. For asbestos fibers >5 micrometers long and a length-to-width ratio equal to or greater than 3:1, NIOSH recommends a REL of 100,000 fibers per cubic meter of air (100,000 f/m³), which is equal to 0.1 fiber per cubic centimeter of air (f/cc), as determined by a 400-liter air sample in accordance with NIOSH Analytical Method 7400. *NIOSH Pocket Guide to Chemical Hazards, Appendix C*. The NIOSH Recommended Exposure Limit (REL) is a non-mandatory, recommended occupational exposure limit. This 0.1 f/cc level is consistent with OSHA's PEL, as well as the 0.1 f/cc Threshold Limit Value (TLV) guidance from the American Conference of Governmental Industrial Hygienists (ACGIH), a private not-for-profit scientific association.

- *Consumer Product Safety Commission (CPSC)*. CPSC is charged with protecting the public from unreasonable risks of injury or death associated with the use of the thousands of types of consumer products under the agency's jurisdiction. The CPSC has banned or restricted the following asbestos-containing products: Emberizing materials (ash and embers), patching compounds, and asbestos-containing garments for general use (16 CFR part 1305; 16 CFR part 1304 and 16 CFR 1500.17(a)(7)).

- *Mine Safety and Health Administration (MSHA)*. MSHA adopted an asbestos standard for exposure limits from airborne contaminants (30 CFR parts 56 and 57 (subpart D)). In these exposure limits, MSHA identifies respiratory protection requirements for mine workers in both surface and

underground mines (Ref. 1).

3. State Actions Pertaining to Chrysotile Asbestos

Pursuant to AHERA, many states have adopted EPA's Asbestos Model Accreditation Plan (MAP) (Appendix C to 40 CFR part 763, subpart E) for asbestos abatement professionals who perform work in schools and public and commercial buildings. Thirty-nine states have EPA-approved MAP programs and separately twelve states have also applied to and received a waiver from EPA to oversee implementation of the Asbestos-Containing Materials in Schools Rule (40 CFR part 763, subpart E) pursuant to AHERA. States also implement regulations pursuant to the Asbestos NESHAP regulations (40 CFR part 61, subpart M). While the asbestos MAP and asbestos NESHAP regulations set minimum national standards, states are free to impose more stringent regulations. Also, both California and Washington prohibit the use of more than 0.1% of asbestos in brake pads and require laboratory testing of brake pads and labeling to certify compliance with their regulations.

A list of state regulations that are independent of the federal AHERA and NESHAP requirements that states implement is in Appendix A of the Risk Evaluation (Ref. 1).

4. International Actions Pertaining to Chrysotile Asbestos

Asbestos is regulated internationally; nearly 60 nations have banned or significantly limited the use of asbestos.

The European Union (EU) first prohibited five uses of asbestos in 1991 and added chrysotile asbestos prohibitions for numerous uses in 1999, with a full ban implemented on January 1, 2005. In 2006, the EU established the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation and renewed its position on asbestos (*Regulation (EC) No 1907/2006 of the European Parliament and of the Council, 18 December 2006*). Regulation (EC) No. 2016/1005 amended REACH Article XVII to formally phase out the use of diaphragms containing chrysotile asbestos for electrolysis installations (*i.e.*, chlor-alkali facilities) by July 1, 2025.

Canada promulgated a regulation to ban asbestos effective December 30, 2018 (Ref. 4). The regulation prohibited the import, sale and use of asbestos, as well as the manufacture, import, sale and use of products containing asbestos. Canada added several limited exclusions, including an allowance for the import and use of asbestos for chlor-alkali facilities using asbestos diaphragm technology until December 31, 2029.

C. Consideration of OSHA Occupational Health Standards in TSCA Risk Evaluations and TSCA Risk Management Actions

TSCA requires EPA to evaluate whether a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or other non-risk factors, including an unreasonable risk to a potentially exposed or susceptible subpopulation identified as relevant by the Administrator, under the conditions of use (COUs). COUs are the circumstances, as determined by the Administrator, under which a chemical is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of. If EPA determines through risk evaluation that a chemical substance presents an unreasonable risk, TSCA section 6 requires EPA to issue regulations applying one or more control requirements to the extent necessary so that the chemical substance no longer presents such risk. Although EPA must consider, and in some cases factor in to the extent practicable, non-risk factors as part of TSCA section 6(a) rulemaking (see TSCA section 6(c)(2)), EPA must nonetheless still ensure that the selected regulatory requirements apply “to the extent

necessary so that the chemical substance or mixture no longer presents [unreasonable] risk.” This risk-based requirement is distinguishable from approaches mandated by other laws, including the Occupational Safety and Health Act (OSH Act), which includes both significant risk and feasibility (technical and economic) assessments in its rulemaking.

Congress intended for EPA to consider occupational risks from chemicals it evaluates under TSCA, among other potential exposures, as relevant and appropriate. As noted previously, section 6(b) of TSCA requires EPA to evaluate risks to potentially exposed or susceptible subpopulations identified as relevant by the Administrator. TSCA section 3(12) defines the term “potentially exposed or susceptible subpopulation” as “a group of individuals within the general population identified by the Administrator who, due to either greater susceptibility or greater exposure, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture, such as infants, children, pregnant women, workers, or the elderly.”

The OSH Act similarly requires OSHA to evaluate risk to workers prior to promulgating new or revised standards and requires OSHA standards to substantially reduce significant risk to the extent feasible, even if workers are exposed over a full working lifetime. *See* 29 U.S.C. 655(b)(5); *Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 642 (1980) (plurality opinion).

Thus, the standards for chemical hazards that OSHA promulgates under the OSH Act share a broadly similar purpose with the standards that EPA promulgates under section 6(a) of TSCA. The control measures OSHA and EPA require to satisfy the objectives of their respective statutes may also, in many circumstances, overlap or coincide. However, as this section outlines, there are important differences between EPA’s and OSHA’s regulatory approaches and jurisdiction, and EPA considers these differences when deciding whether and how to account for OSHA requirements when evaluating and addressing potential unreasonable risk to workers so that compliance requirements are clearly explained to the regulated community. To that end, EPA has also aligned with ancillary requirements of OSHA standards, to the extent possible, by cross referencing them.

1. OSHA Requirements

OSHA’s mission is to ensure that employees work in safe and healthful conditions. The OSH Act establishes requirements that each employer comply with the General Duty Clause of the Act (29 U.S.C. 654(a)), as well as with occupational safety and health standards issued under the Act.

a. General Duty Clause of the OSH Act

The General Duty Clause of the OSH Act requires employers to keep their workplace free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees. The General Duty Clause is cast in general terms, and does not establish specific requirements like exposure limits, personal protective equipment requirements (PPE), or other specific protective measures that EPA could potentially consider when developing its risk evaluations or risk management requirements. OSHA, under limited circumstances, has cited the General Duty Clause for exposure to chemicals. To prove a violation of the General Duty Clause, OSHA must prove employer or industry recognition of the hazard, the hazard was causing or likely to cause death or serious physical harm, and a feasible method to eliminate or materially reduce the hazard was available. In rare situations, OSHA has cited employers for violation of the General Duty Clause where exposures were below a chemical-specific PEL. In such situations, OSHA must demonstrate that the employer had actual knowledge that

the PEL was inadequate to protect its employees from death or serious physical harm. Because of the heavy evidentiary burden on OSHA to establish violations of the General Duty Clause, it is not frequently used to cite employers for employee exposure to chemical hazards.

b. OSHA Standards

OSHA standards are issued pursuant to the OSH Act and are found in title 29 of the Code of Federal Regulations. There are separate standards for general industry, construction, maritime and agriculture sectors, as well as general standards applicable to a number of sectors (*e.g.*, OSHA's Respiratory Protection standard). OSHA has numerous standards that apply to chemical manufacturers and processors, as well as downstream employers whose employees may be occupationally exposed to hazardous chemicals.

OSHA sets legally enforceable limits on the airborne concentrations of hazardous chemicals, referred to as permissible exposure limits (PELs), to protect workers against the health effects of exposure to hazardous substances (29 CFR 1910 subpart Z, 1915 subpart Z, 1926 subparts D and Z). Under section 6(a) of the OSH Act, OSHA was permitted an initial two-year window after the passage of the Act to adopt “any national consensus standard and any established Federal standard.” 29 U.S.C. 655(a). OSHA used this authority in 1971 to establish PELs that were adopted from federal health standards originally set by the Department of Labor through the Walsh-Healy Act, in which approximately 400 occupational exposure limits were selected based on the American Conference of Governmental Industrial Hygienists (ACGIH) 1968 list of Threshold Limit Values (TLVs). In addition, about 25 exposure limits recommended by the American Standards Association (now called the American National Standards Institute) (ANSI) were adopted as PELs.

Following the two-year window provided under section 6(a) of the OSH Act for adoption of national consensus and existing Federal standards, OSHA has issued health standards following the requirements in section 6(b) of the Act. OSHA has established approximately 30 PELs under section 6(b)(5) as part of comprehensive substance-specific standards that include additional requirements for protective measures such as use of PPE, establishment of regulated areas, exposure assessment, hygiene facilities, medical surveillance, and training. These ancillary provisions in substance specific OSHA standards further mitigate residual risk that could be present due to exposure at the PEL.

Many OSHA PELs have not been updated since they were established in 1971 (The asbestos PEL was last updated in 1994). Yet, in many instances, scientific evidence has accumulated suggesting that the current limits are not sufficiently protective. As stated on OSHA's annotated PELs web page, OSHA has recognized that many of its PELs are outdated and inadequate for ensuring protection of worker health (Ref. 5). In addition, health standards issued under section 6(b)(5) of the OSH Act must reduce significant risk only to the extent that it is technologically and economically feasible. OSHA's legal requirement to demonstrate that its section 6(b)(5) standards are technologically and economically feasible often precludes OSHA from imposing exposure control requirements sufficient to ensure that the chemical substance no longer presents a significant risk to workers. In sum, the great majority of OSHA's chemical standards are outdated or do not eliminate significant risk contemplated by the Supreme Court's interpretation of the OSH Act. *See Am. Petroleum Inst.*, 448 U.S. at 655. They would, in either case, be unlikely to address unreasonable risk to workers within the meaning of TSCA, since TSCA section 6(b) unreasonable risk determinations may account for unreasonable risk to more sensitive endpoints and working populations than OSHA's risk evaluations typically contemplate, and EPA is obligated to apply TSCA section 6(a) risk management requirements to the extent necessary so that the unreasonable risk is no longer presented.

Because the requirements and application of TSCA and OSHA regulatory analyses differ, it is appropriate that EPA conduct risk evaluations and, where it finds unreasonable risk to workers, develop risk management requirements for chemical substances that OSHA also regulates, and it is expected that EPA's findings and requirements may sometimes diverge from OSHA's. However, it is also appropriate that EPA consider the chemical standards that OSHA has already developed, so as to limit the compliance burden to employers by aligning management approaches required by the agencies, where alignment will adequately address unreasonable risk to workers. The following section discusses EPA's consideration of OSHA standards in its risk evaluation and management strategies under TSCA.

2. Consideration of OSHA Standards in TSCA Risk Evaluations

When characterizing the risk during risk evaluation under TSCA, EPA believes it is appropriate to evaluate the levels of risk present in baseline scenarios where no mitigation measures are assumed to be in place for the purpose of determining unreasonable risk (see Unit II.C.2.a). (It should be noted that, there are some cases where baseline scenarios may reflect certain mitigation measures, such as in instances where exposure estimates are based on monitoring data at facilities that have existing engineering controls in place.) In addition, EPA believes it is appropriate to also evaluate the levels of risk present in scenarios considering applicable OSHA requirements (*e.g.*, chemical-specific PELs and/or chemical-specific health standards with PELs and additional ancillary provisions) as well as scenarios considering industry or sector best practices for industrial hygiene that are clearly articulated to the Agency. By characterizing risks using scenarios that reflect different levels of mitigation, EPA risk evaluations can help inform potential risk management actions by providing information that could be used during risk management to tailor risk mitigation appropriately to address any unreasonable risk identified (see Unit II.C.2.b and Unit II.C.3).

a. Risk Characterization for Unreasonable Risk Determination

When undertaking unreasonable risk determinations as part of TSCA risk evaluations, EPA cannot assume as a general matter that an applicable OSHA requirement or industry practice is consistently and always properly applied. Mitigation scenarios included in the EPA risk evaluation (*e.g.*, scenarios considering use of PPE) likely represent what is happening already in some facilities. However, the Agency cannot assume that all facilities will have adopted these practices for the purposes of making the TSCA risk determination.

Therefore, EPA conducts baseline assessments of risk and makes its determination of unreasonable risk from a baseline scenario that is not based on an assumption of compliance with OSHA standards, including any applicable exposure limits or requirements for use of respiratory protection or other PPE. Making unreasonable risk determinations based on the baseline scenario should not be viewed as an indication that EPA 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 EPA's recognition that unreasonable risk may exist for subpopulations of workers that may be highly exposed because they are not covered by OSHA standards, such as self-employed individuals and public sector workers who are not covered by a State Plan, or because their employer is out of compliance with OSHA standards, or because EPA finds unreasonable risk for purposes of TSCA notwithstanding existing OSHA requirements.

b. Risk Evaluation To Inform Risk Management Requirements

In addition to the baseline scenario described previously, EPA risk evaluations may characterize the levels of risk present in scenarios considering applicable OSHA requirements (*e.g.*, chemical-specific PELs and/or chemical-specific health standards with PELs and additional ancillary provisions) as well as scenarios considering industry or sector best practices for industrial hygiene that are clearly articulated to the Agency. EPA's evaluation of risk under scenarios that, for example, incorporate use of engineering or administrative controls, or personal protective equipment, serves to inform its risk management efforts. By characterizing risks using scenarios that reflect different levels of mitigation, EPA risk evaluations can help inform potential risk management actions by providing information that could be used during risk management to tailor risk mitigation appropriately to address worker exposures where the Agency has found unreasonable risk. In particular, as discussed below, EPA can use the information developed during its risk evaluation to determine whether alignment of EPA's risk management requirements with existing OSHA requirements or industry best practices will adequately address unreasonable risk as required by TSCA.

In the TSCA Risk Evaluation for Asbestos, Part 1 for chrysotile asbestos, EPA presented risk estimates based on workers' exposures with and without respiratory protection. EPA determined that even when respirators are used by workers, unreasonable risk would remain in some of the conditions of use evaluated. In risk management, EPA is not relying only on the use of respirators to reduce exposures to workers so that chrysotile asbestos does not present unreasonable risk, since for some conditions of use respirators are not a viable regulatory option (*e.g.*, the respirator alone does not reduce exposures enough so that asbestos does not present unreasonable risk). In addition, EPA is considering the NIOSH/OSHA hierarchy of controls when developing risk management actions, and therefore use of respirators might only be suitable after other steps have been taken by the facilities to reduce exposures.

3. Consideration of OSHA Standards in TSCA Risk Management Actions

When undertaking risk management actions, EPA: 1. Develops occupational risk mitigation measures to address any unreasonable risks identified by EPA, striving for consistency with applicable OSHA requirements and industry best practices, including appropriate application of the hierarchy of controls, when those measures would address an unreasonable risk; and 2. Ensures that EPA requirements apply to all potentially exposed workers in accordance with TSCA requirements. Consistent with TSCA section 9(d), EPA consults and coordinates 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.

Informed by the mitigation scenarios and information gathered during the risk evaluation and risk management process, the Agency might propose rules that require risk management practices that may be already common practice in many or most facilities. Adopting clear, comprehensive regulatory standards will foster compliance across all facilities (ensuring a level playing field) and assure protections for all affected workers, especially in cases where current OSHA standards may not apply or not be sufficient to address the unreasonable risk.

For evaluation scenarios which involve OSHA chemical-specific PELs, EPA's risk evaluation in some cases may illustrate that limiting exposure to OSHA's PEL would result in risk levels below the benchmark under the TSCA standard under certain conditions of use. In these cases, TSCA risk management requirements could incorporate and reinforce requirements in OSHA standards and ensure that risks are addressed, including for circumstances where OSHA requirements are not applicable (*e.g.*, public sector workers) by asserting TSCA compliance/enforcement as well. EPA's risk

evaluation may also find unreasonable risk under TSCA associated with some occupational conditions of use, even when the applicable OSHA requirements are being met. In these cases, EPA would need to develop risk management requirements beyond those included in OSHA's standards.

D. Summary of EPA's Risk Evaluation Activities on Chrysotile Asbestos

In July 2017, EPA published a scope of the chrysotile asbestos risk evaluation (82 FR 31592, July 7, 2017), and after receiving public comment, published a problem formulation in June 2018 (83 FR 26998, June 11, 2018). In March 2020, EPA released a draft risk evaluation for asbestos, and in December 2020, following public comment and peer review by the Science Advisory Committee on Chemicals (SACC), EPA finalized the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos (Ref. 1).

In the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos, EPA evaluated risks associated with the conditions of use involving six non-legacy use categories of chrysotile asbestos including: Chlor-alkali diaphragms, sheet gaskets in chemical production, other gaskets, oilfield brake blocks, aftermarket automotive brake/linings, and other vehicle friction products. EPA evaluated the conditions of use within these categories, including manufacture (including import), processing, distribution, commercial use, consumer use, and disposal (Ref. 1). Descriptions of these conditions of use are included in Unit III.B.2.

The risk evaluation identified potential adverse health effects associated with exposure to chrysotile asbestos, including the risk of mesothelioma, lung cancer, and other cancers from chronic inhalation. A further discussion of the chrysotile asbestos hazards is included in Unit III.B.1. The chrysotile asbestos conditions of use that EPA determined drive the chemical substance's unreasonable risk to health include processing and industrial use of diaphragms in the chlor-alkali industry; processing and industrial use of sheet gaskets used in chemical production; industrial use and disposal of brake blocks in the oil industry; commercial use and disposal of aftermarket automotive brakes/linings; commercial use and disposal of other vehicle friction products; commercial use and disposal of other gaskets; consumer use and disposal of aftermarket automotive brakes/linings; and consumer use and disposal of other gaskets. This determination includes unreasonable risk of injury to health to both workers and occupational non-users (ONUs) during occupational exposures, and to consumers and bystanders during exposures to consumer uses.

EPA determined that there are no conditions of use that drive unreasonable risk to the environment.

As previously discussed, following the November 2019 decision of the Ninth Circuit Court of Appeals in *Safer Chemicals Healthy Families v. EPA*, 943 F.3d 397, the agency will also, in parallel to pursuing risk management to address unreasonable risk identified in the Risk Evaluation for Asbestos, Part 1, conduct a Part 2 of the Asbestos Risk Evaluation: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos. Legacy uses and associated disposals for asbestos are conditions of use for which manufacture (including import), processing, and distribution in commerce for a use no longer occur, but where use (e.g., in situ building material) and disposal are still known, intended, or reasonably foreseen to occur.

Part 2 of the Risk Evaluation for Asbestos is currently underway. The October 13, 2021, consent decree in the case *Asbestos Disease Awareness Organization et al v. Regan et al*, 4:21-cv-03716-PJH (N.D. Cal.) requires the agency to publish a final Part 2 asbestos risk evaluation on or before December 1, 2024. EPA published a draft scope for the Part 2 asbestos risk evaluation on December 29, 2021 (86 FR 74088).

The Risk Evaluation for Asbestos, Part 2: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos will include evaluation of the legacy uses and associated disposals of chrysotile asbestos and the five amphibole fiber types described in the TSCA Title II definition in addition to Libby Amphibole Asbestos (mainly consisting of tremolite, winchite, and richterite). Additionally, where EPA identifies reasonably available information demonstrating the presence of asbestos in talc that fall under TSCA authority, talc containing asbestos impurities will be evaluated in Part 2.

As part of the problem formulation for asbestos, EPA found that exposures to the general population may occur from the conditions of use considered in Part 1 of the asbestos risk evaluation (Ref. 6). EPA determined, in Part 1 of the asbestos risk evaluation, that exposure to the general population via surface water, drinking water, ambient air, and disposal pathways falls under the jurisdiction of other environmental statutes administered by EPA. The Agency, therefore, at that time explained that it was tailoring the scope of the Part 1 risk evaluation for asbestos using authorities in TSCA sections 6(b) and 9(b)(1). As such, EPA did not evaluate hazards or exposures to the general population and the unreasonable risk determinations made in Part 1 of the asbestos risk evaluation do not account for exposures to the general population. However, EPA expects that any potential exposures to the general population would be adequately addressed through the proposed prohibition on the manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos to address the unreasonable risk posed to workers, ONUs, consumers and bystanders. EPA does plan to address exposures to the general population for the conditions of use evaluated in Part 2 of the risk evaluation.

EPA also concluded that, based on the reasonably available information in the published literature provided by industries using asbestos and reporting to EPA databases, there were minimal or no releases of asbestos to surface water associated with the conditions of use that EPA evaluated in Part 1. Therefore, EPA concluded that there is low or no risk to aquatic and sediment-dwelling organisms from exposure to chrysotile asbestos. Terrestrial pathways, including biosolids from wastewater treatment plants, were excluded from the analysis at the problem formulation stage (Refs. 1 and 6). However, EPA expects that any potential exposures to terrestrial species, as with the general population, would be adequately addressed through the proposed prohibition on the manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos.

III. Regulatory Approach

A. Background

Under TSCA section 6(a), if the Administrator determines through a TSCA section 6(b) risk evaluation that a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or other non-risk factors, including an unreasonable risk to a potentially exposed or susceptible subpopulation identified as relevant to the Agency's risk evaluation, under the conditions of use, EPA must by rule apply one or more requirements to the extent necessary so that the chemical substance no longer presents such risk.

The TSCA section 6(a) requirements can include one or more of, the following actions:

- Prohibit, limit, or otherwise restrict, the manufacturing, processing, or distribution in commerce of the substance or mixture (TSCA section 6(a)(1)).

- Prohibit, limit, or otherwise restrict, the manufacturing, processing, or distribution in commerce of the substance or mixture for particular uses or above a specific concentration for a particular use (TSCA section 6(a)(2)).
- Require clear and adequate minimum warning and instructions with respect to use, distribution in commerce, or disposal of the substance or mixture (TSCA section 6(a)(3)).
- Require record keeping, monitoring or testing by manufacturers and processors (TSCA 6(a)(4)).
- Prohibit or regulate any manner or method of commercial use of the substance or mixture (TSCA section 6(a)(5)).
- Prohibit or otherwise regulate any manner or method of disposal of the substance or mixture by certain persons (TSCA section 6(a)(6)).
- Direct manufacturers or processors to give notice of the determination of unreasonable risk to distributors, users, and the public and replace or repurchase the substance or mixture (TSCA section 6(a)(7)).

As described in Unit III.B., EPA analyzed how the TSCA section 6(a) requirements could be applied so that the unreasonable risk found to be presented in Part 1 of the risk evaluation for chrysotile asbestos is no longer presented. TSCA section 6(c)(2)(A) requires EPA, in proposing and promulgating TSCA section 6(a) rules, to include a statement of effects addressing certain issues, including the effects of the chemical substance on health and the environment; the magnitude of exposure of the chemical substance to humans and the environment; the benefits of the chemical substance for various uses; and the reasonably ascertainable economic consequences of the rule, including consideration of the likely effects of the rule on the national economy, small business, technological innovation, the environment and public health; and the costs and benefits and the cost effectiveness of the regulatory action and of the one or more primary alternative regulatory actions considered by the Administrator. As a result, EPA is proposing a regulatory action and requesting comment on an alternative regulatory action, which are discussed in Unit IV. EPA is requesting public comment on all aspects of the proposed regulatory action and the primary alternative regulatory action.

Under the authority of TSCA section 6(g), EPA may consider granting a time-limited exemption for a specific condition of use for which EPA finds: That the specific condition of use is a critical or essential use for which no technically and economically feasible safer alternative is available, taking into consideration hazard and exposure; that compliance with the proposed requirement would significantly disrupt the national economy, national security, or critical infrastructure; or that the specific condition of use of the chemical substance, as compared to reasonably available alternatives, provides a substantial benefit to health, the environment, or public safety. EPA is not proposing to grant an exemption from the rule requirements. EPA is aware that chlor-alkali chemicals are used in sectors important to the national economy and operation of critical infrastructure to protect human health, for uses such as drinking water treatment. Sectors include: Water and Wastewater Systems Sector, Chemical Sector, Critical Manufacturing Sector, Defense Industrial Base Sector, Emergency Services Sector, Energy Sector, Food and Agriculture Sector, and Healthcare and Public Health sector. EPA is requesting public comment regarding the need and rationale for exemptions from the proposed rule pursuant to the provisions of TSCA section 6(g).

TSCA section 6(c)(2)(C) requires that, in deciding whether to prohibit or restrict in a manner that substantially prevents a specific condition of use and in setting an appropriate transition period for such action, EPA considers, 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 proposed prohibition or restriction takes effect. Unit III.B.4. includes more information regarding EPA's consideration of alternatives.

1. Consultations

EPA conducted consultations and outreach in preparing for this proposed regulatory action. The Agency held a federalism consultation on May 13, 2021, as part of this rulemaking process and pursuant to Executive Order 13132. During the consultation EPA met with state and local officials early in the process of developing the proposed action to permit them to have meaningful and timely input into its development (Ref. 7). During the consultation, participants and EPA discussed the authority given under TSCA section 6 regarding prohibition, how alternatives may be treated in rulemaking, and which activities would be potentially regulated in the proposed rule (Ref. 7).

On May 24, 2021, and June 3, 2021, EPA held tribal consultations for Part 1: Chrysotile Asbestos. Tribal officials were given the opportunity to meaningfully interact with EPA risk managers concerning the current status of risk management. EPA received questions during both meetings held during the consultation period concerning potential risks to workers, consumers, and general population (Ref. 8).

EPA also conducted outreach to advocates of communities that might be subject to disproportionate exposure to chrysotile asbestos, such as minority populations, low-income populations and indigenous peoples. EPA's environmental justice (EJ) consultation occurred from June 1 through August 13, 2021. On June 1 and 9, 2021, EPA held public meetings as part of this consultation. These meetings were held pursuant to and in compliance with Executive Orders 12898 and 14008. EPA received several comments following the EJ meetings. Commenters expressed concerns that consumers who live near chlor-alkali facilities and Do-It-Yourself (DIY) auto workers could be exposed unless chrysotile asbestos is banned (Ref. 9).

Units VIII.C., VIII.E., VIII.F., VIII.J. provide more information regarding the consultations.

2. Other Stakeholder Consultations

In addition to the consultations described in Units VIII.C., VIII.E., VIII.F., and VIII.J. on February 3, 2021, EPA held a public webinar (Ref. 10) and also attended a Small Business Administration roundtable on February 5, 2021, where EPA staff provided an overview of the TSCA risk management process and the findings in the Part 1 risk evaluation (EPA-HQ-OPPT-2021-0057). Attendees of these meetings were given an opportunity to voice their concerns on both the risk evaluation and the risk management process.

Furthermore, EPA engaged in discussions with industry, non-governmental organizations, other national governments, asbestos experts and users of chrysotile asbestos. Summaries of external meetings held during the development of this proposed rule are in the docket. These meetings helped to inform how long industry would need to implement a prohibition, how companies currently protect workers, and the extent to which each industry uses asbestos-free technology. Additionally, discussions with the Canadian government helped EPA to better understand how Canada approached its 2018 regulation to prohibit asbestos use (such as the asbestos-containing products covered in the prohibition and the chosen prohibition effective dates) to better inform this proposed rule (Refs. 4 and 11). The purpose of these stakeholder discussions was to hear from importers, processors, distributors, users, academics, advisory councils, and members of the public health community about the conditions of use evaluated for chrysotile asbestos; substitute chemicals or alternative methods; engineering control

measures and personal protective equipment currently in use or potentially feasible for adoption; and other risk reduction approaches that may have already been adopted or considered for the evaluated conditions of use.

B. Regulatory Assessment of Chrysotile Asbestos Under Part 1

This Unit describes the additional information that EPA considered in deciding the proposed regulatory approach for chrysotile asbestos, so that chrysotile asbestos would no longer present an unreasonable risk under the conditions of use evaluated under Part 1 of the risk evaluation. This Unit describes the unreasonable risk, the conditions of use of chrysotile asbestos that are the focus of this regulation, and how EPA is proposing to apply the TSCA section 6(a) requirements, including the consideration of alternatives in deciding whether to prohibit or restrict in a manner that substantially prevents a specific condition of use.

1. Description of Unreasonable Risk

The health endpoint driving EPA's determination of unreasonable risk for chrysotile asbestos under the conditions of use is cancer from inhalation exposure (Ref. 1). This unreasonable risk includes the risk of mesothelioma, lung cancer, and other cancers from chronic inhalation. An inhalation unit risk (IUR), which is an estimate of the carcinogenic risk associated with a unit concentration of air, was developed for chrysotile asbestos. The IUR was based on epidemiological studies on mesothelioma and lung cancer in cohorts of workers using chrysotile asbestos in commerce. Since there was no exposure-response data for cancer of the ovary and laryngeal cancer effects, a direct estimate of risk from ovarian and laryngeal cancer could not be made for the unit risk calculation. An adjustment factor for ovarian and laryngeal cancer effects was applied to risk value estimates to correct for the negative bias in the risk values derived from only lung cancer and mesothelioma. And, as discussed in Section 4.2.1 of the Risk Evaluation (Ref. 1), for workers and ONUs exposed in a workplace, EPA used as a benchmark extra risks of 1 cancer per 10,000 people. At this risk level 1×10^{-4} (1E-4), if the noncancer effects (*e.g.*, asbestosis and pleural thickening) of chrysotile asbestos are similar to Libby Amphibole Asbestos, the non-cancer effects of chrysotile asbestos are likely to contribute additional risk to the overall health risk of chrysotile asbestos beyond the risk of cancer. Thus, the overall health risks of chrysotile asbestos are underestimated based on cancer risk alone.

For processing and industrial use of chrysotile asbestos diaphragms, EPA found unreasonable risk to workers from chronic inhalation exposure to chrysotile asbestos, based on industry data including personal air monitoring (*i.e.*, worker breathing zone results) and area air monitoring (*i.e.*, fixed location air monitoring results) that led to the high-end risk estimates exceeding the 1E-4 risk benchmark (Ref. 1).

For both the processing (*i.e.*, gasket cutting) and industrial use activities of chrysotile asbestos-containing sheet gaskets for chemical production, EPA found unreasonable risk to workers and ONUs from chronic inhalation exposure to chrysotile asbestos based on monitoring data provided by industry and data in the published literature (Ref. 1).

For the industrial use and disposal of chrysotile asbestos-containing oilfield brake blocks, EPA found unreasonable risk to workers and ONUs from chronic inhalation exposure to chrysotile asbestos based on a 1988 study of Norway's offshore petroleum industry (Ref. 1).

For the commercial use and disposal of aftermarket automotive chrysotile asbestos-containing brakes/linings and other vehicle friction products (except for the NASA Super Guppy Turbine aircraft use), EPA found unreasonable risk to workers and ONUs from chronic inhalation exposure to chrysotile asbestos based on published literature and OSHA data (Section 2.3.1.8.1 of the Risk Evaluation). EPA determined, based on exposure data provided by NASA to EPA (Section 2.3.1.8.2 of the Risk Evaluation), that the use and disposal of chrysotile asbestos-containing brakes for NASA's Super Guppy Turbine aircraft did not present an unreasonable risk of injury to health or the environment.

For the commercial use and disposal of other chrysotile asbestos-containing gaskets, EPA found unreasonable risk to workers and ONUs from chronic inhalation exposure to chrysotile asbestos based on exposure scenarios from occupational monitoring data for asbestos-containing gasket replacement activities in vehicles.

For consumer use and disposal of aftermarket automotive chrysotile asbestos-containing brakes/linings and other chrysotile asbestos-containing gaskets, EPA found unreasonable risk to consumers and bystanders from chronic inhalation exposure to chrysotile asbestos, using as a benchmark cancer risk level of 1×10^{-6} ($1E-6$) for consumers and bystanders.

EPA also noted in the Part 1 asbestos risk evaluation that it is possible for industrial workers or consumers working with aftermarket automotive products or other types of asbestos-containing gaskets to cause unintentional exposure to individuals in their residence due to take-home exposure from contaminated clothing or other items. While EPA did not identify or receive information which could inform such an exposure scenario and does not currently have models which can adequately evaluate and address this pathway, take-home exposures were considered pathways in the Part 1 risk evaluation for asbestos that could increase risk to populations associated with the workers, ONUs, consumers or bystanders.

Unit V.A. summarizes the health effects and the magnitude of the exposures (Ref. 1).

The regulatory actions proposed, and alternatives, so that chrysotile asbestos no longer presents this unreasonable risk, are in Unit IV.

2. Description of Conditions of Use

This Unit describes the conditions of use subject to this proposed regulatory action.

Although EPA identified both industrial and commercial uses in Part 1 of the risk evaluation for purposes of distinguishing scenarios, the Agency clarified then and clarifies now that EPA interprets the authority over “any manner or method of commercial use” under TSCA section 6(a)(5) to reach both.

The conditions of use subject to this proposed regulatory action do not include any legacy uses or associated disposal for chrysotile asbestos or other asbestos fiber types. EPA will consider legacy uses and associated disposals in Part 2 of the risk evaluation for asbestos (Ref. 1).

a. Processing and industrial use of chrysotile asbestos diaphragms in the chlor-alkali industry:

Chrysotile asbestos is imported and used by the chlor-alkali industry for the fabrication of semi-permeable diaphragms. The chrysotile asbestos diaphragms are used in an industrial process for the production of chlorine and sodium hydroxide (caustic soda). Asbestos is chemically inert and able to

effectively separate chlorine and sodium hydroxide in electrolytic cells. The chlor-alkali chemical production process involves the separation of the sodium and chloride atoms of salt in saltwater (brine) via electricity to produce sodium hydroxide (caustic soda), hydrogen, and chlorine. This reaction occurs in an electrolytic cell. The cell contains two compartments separated by a semi-permeable diaphragm, which is made mostly of chrysotile asbestos. The diaphragm prevents the reaction of the caustic soda with the chlorine and allows for the separation of both materials for further processing. Diaphragms are typically used for 1-3 years before they must be replaced (Ref. 1).

b. Processing and industrial use of chrysotile asbestos-containing sheet gaskets in chemical production:

Sheet gaskets are used to form a leakproof seal between fixed components. Chrysotile asbestos-containing gaskets are used primarily in industrial applications with extreme operating conditions, such as high temperatures, high pressures, and the presence of chlorine or other corrosive substances. Such extreme production conditions are found in many chemical manufacturing and processing operations, including: The manufacture of titanium dioxide and chlorinated hydrocarbons; polymerization reactions involving chlorinated monomers; and steam cracking at petrochemical facilities. Chrysotile asbestos-containing gaskets are fabricated from sheets composed of 80% (minimum) chrysotile asbestos fully encapsulated in styrene butadiene rubber. The chrysotile asbestos-containing sheets are imported into the U.S. in large rolls where they are cut to shape by a fabricator and subsequently used at titanium dioxide manufacturing facilities. Installed gaskets typically remain in use anywhere from a few weeks to three years (Ref. 1).

c. Industrial use and disposal of chrysotile asbestos-containing brake blocks in oil industry:

The rotary drilling rig of an oil well uses a drawworks hoisting machine to raise and lower the traveling blocks during drilling. The drawworks is a permanently installed component of a mobile drilling rig. The drawworks consists of a large-diameter steel spool, a motor, a main brake, a reduction gear, and an auxiliary brake. The brake of the drawworks hoisting machine is an essential component that is engaged when no motion of the traveling block is desired. Chrysotile asbestos-containing brake blocks are imported for use in some drawworks, reportedly most often on larger drilling rigs. Spent brake blocks must periodically be replaced by workers in the oilfield industry who maintain the rig (Ref. 1).

d. Commercial use and disposal of aftermarket automotive chrysotile asbestos-containing brakes/linings:

The two primary types of automobile brakes are drum brakes and disc brakes, and chrysotile asbestos has been found in both, in linings for drum brake assemblies and pads in disc brake assemblies. Disc brakes are much more common today than drum brakes, but many passenger vehicles have a combination of disc brakes for the front wheels and drum brakes for the rear wheels. Chrysotile asbestos fibers offer many properties that are desired for brake linings and brake pads, and up through the 1990s many new automobiles manufactured in the United States had brake assemblies with asbestos-containing components. However, by 2000, asbestos was no longer used in the brakes of virtually any original equipment manufacturer (OEM) automobiles sold domestically. Asbestos in automotive parts is not currently banned in the U.S., and asbestos-containing brake products may be imported and sold in the United States. The quantity of asbestos-containing brake parts imported is unknown. Therefore, asbestos could be found in the United States: (1) In vehicles on the road that have asbestos-containing brakes, whether from older and vintage vehicles or aftermarket parts; and (2) in

vehicles that have new asbestos-containing brakes installed by establishments or individuals that use certain imported products. Brakes must be repaired and replaced periodically, which involves activities that create dust and potential occupational exposure to asbestos (Ref. 1).

e. Commercial use and disposal of other chrysotile asbestos-containing vehicle friction products:

While EPA has verified that U.S. automotive manufacturers are not installing asbestos-containing brakes on new cars for domestic distribution, EPA identified a company that claimed to import asbestos-containing brakes and then install them on cars in the United States for export only. Following completion of the risk evaluation, and during the risk management phase following publication of the final risk evaluation, this company disavowed this practice (Ref. 12).

In addition, there is a limited use of asbestos-containing brakes for a special, large transport plane, the “Super-Guppy” Turbine (SGT) aircraft, owned and operated by the National Aeronautics and Space Administration (NASA). The SGT aircraft is a specialty cargo plane that transports oversized equipment, and it is considered a mission-critical vehicle. Only one SGT aircraft is in operation today, and NASA acquired it in 1997. The SGT aircraft averages approximately 100 flights per year. When not in use, it is hangered and maintained at a NASA facility in El Paso, Texas. The SGT aircraft has eight landing gear systems, and each system has 32 brake blocks, which contain chrysotile asbestos. Potential worker exposures are associated with servicing the brakes. As explained in the risk evaluation, the following two conditions of use do not present unreasonable risk, and therefore do not require mitigation by this proposed regulation: Use of chrysotile asbestos-containing brakes for a specialized, large NASA transport plane; and the disposal of chrysotile asbestos-containing brakes for a specialized, large NASA transport plane (Ref. 1).

f. Commercial use and disposal of other asbestos-containing gaskets:

EPA also identified the use of chrysotile asbestos-containing gaskets in the exhaust system of a specific type of utility vehicle manufactured and available for purchase in the United States. The utility vehicle manufacturer purported at the time to receive the pre-cut gaskets which are then installed during manufacture of the vehicle. The gaskets may be removed during servicing of the exhaust system. EPA determined that workers and ONUs who install the gaskets during assembly and workers who may repair these vehicles are exposed to asbestos (Ref. 1).

g. Consumer use and disposal of aftermarket automotive chrysotile asbestos-containing brakes/linings:

As discussed in Unit III.B.2.d., asbestos could be found in the United States: (1) In vehicles on the road that have asbestos-containing brakes, whether from original manufacturers (primarily for older and vintage vehicles) or aftermarket parts; and (2) in vehicles that have new asbestos-containing brakes installed by establishments or individuals that use certain imported products. Brakes must be repaired and replaced periodically, activities which create dust and exposure to asbestos for consumers and bystanders who perform their own do-it-yourself automobile maintenance and repairs on asbestos-containing components (Ref. 1).

h. Consumer use and disposal of other asbestos-containing gaskets:

As discussed in Unit III.B.2.f., EPA also identified the use of chrysotile asbestos-containing gaskets in the exhaust system of a specific type of utility vehicle manufactured and available for purchase in the United States. The gaskets may be removed during servicing of the exhaust system. EPA determined that do-it-yourself consumers who may repair these vehicles and bystanders are exposed to asbestos (Ref. 1).

3. Description of TSCA Section 6(a) Requirements Considered To Address Unreasonable Risk

EPA examined which requirements or combination of requirements under TSCA section 6(a), as described in Unit III, have the potential to reduce the risk to workers, occupational non-users (ONUs), consumers and bystanders so that chrysotile asbestos no longer presents unreasonable risk. As required by TSCA, as amended, in selecting among these requirements, EPA factored in, to the extent practicable, considerations including the effects of the chemical on health and the environment, the benefits of the chemical substance for various uses, and the reasonably ascertainable economic consequences of the rule, including the effect of the rule on the national economy, small business, technological innovation, the environment and public health; the costs and benefits of the proposed regulatory action and one or more primary regulatory alternative regulatory actions considered; and the cost effectiveness of the proposed regulatory action and of the one or more primary alternative regulatory actions considered. See Unit V for further discussion related to TSCA section (c)(2)(A) considerations, including the statement of effects of the proposed rule with respect to these considerations.

EPA developed a proposed regulatory action and one primary alternative regulatory action, which are described in Units IV.A. and IV.B. To identify and select a regulatory action, EPA considered the route of exposure driving the unreasonable risk (inhalation) and the exposed population. For consumer conditions of use, EPA considered how it could exercise its authority under TSCA to regulate the manufacturing, processing, and distribution in commerce of chrysotile asbestos at different levels in the supply chain to eliminate or restrict the availability of chrysotile asbestos and chrysotile asbestos-containing products for consumer use to effectively address the unreasonable risk to consumers and bystanders. EPA also considered the regulatory authority under TSCA and other statutes such as OSHA, CPSA, and other EPA-administered statutes to examine (1) whether there are opportunities for identified risk from chrysotile asbestos to be addressed under other statutes, such that a referral may be warranted under TSCA section 9(a) or section 9(b), or (2) whether TSCA section 6(a) regulation could include alignment of requirements and definitions to minimize confusion to the regulated entities and the general public.

In addition, EPA considered other TSCA requirements such as the consideration of alternatives when recommending prohibition or a substantial restriction (TSCA section 6(c)(2)(C), as outlined in Unit III.B.4.), and the requirements in TSCA section 6(d)(1)(B) for compliance dates (described in the proposed and primary alternative regulatory actions in Unit IV.).

To the extent information was reasonably available, when selecting regulatory actions, EPA considered the pollution prevention actions and the hierarchy of controls adopted by OSHA and NIOSH, with the goal of identifying risk management control methods that are permanent, feasible, and effective. EPA also considered how to address the unreasonable risk while providing flexibility to the regulated entities, given the functionality and the performance efficacy of chrysotile asbestos. EPA considered the information presented in the risk evaluation, additional input from stakeholders (as described in Unit III.A.) and anticipated compliance strategies from regulated entities.

EPA evaluated regulatory options under TSCA section 6(a) to address the unreasonable risk found to be presented by chrysotile asbestos under the conditions of use evaluated in the Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos. EPA is proposing a prohibition of the manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos in bulk form and as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and chrysotile asbestos-containing sheet gaskets used in chemical production (descriptions of these conditions of use are in Unit III.B.2.) two years following the effective date of the final rule, which is 60 days after final rule promulgation. Associated with that prohibition, EPA considered and is proposing interim recordkeeping requirements and is proposing to cross reference existing disposal regulations. The proposed prohibition, recordkeeping requirements, and cross referencing are described in more detail in Unit IV.A. Similarly, EPA evaluated and is proposing a prohibition of the manufacture (including import), processing, distribution in commerce and industrial or commercial use of chrysotile asbestos-containing brake blocks used in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; other vehicle friction products; and asbestos-containing gaskets 180 days after the effective date of the final rule. EPA is further proposing pursuant to TSCA section 6(a) to prohibit manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use, and other chrysotile asbestos-containing gaskets for consumer use 180 days after the effective date of the final rule. EPA also is proposing disposal and recordkeeping requirements for these conditions of use. EPA does not intend the proposed prohibitions on processing or distribution in commerce to prohibit any processing or distribution in commerce incidental to disposal of the chrysotile asbestos waste in accordance with the proposed requirements.

EPA considered alternative regulatory requirements that would reduce exposures in occupational settings and address consumer and bystander exposure so that chrysotile asbestos no longer presents unreasonable risk. A possible requirement under TSCA section 6(a) that EPA considered was the use of respirators; however, EPA determined that respirators were not adequate for all conditions of use that are driving unreasonable risk, and EPA also would like to consider the NIOSH/OSHA hierarchy of controls instead of considering only respirators as part of management of occupational exposures. Other possible requirements under TSCA section 6(a) such as limiting the weight fraction or size of the items containing chrysotile asbestos, were not considered since those seemed impracticable for the conditions of use under consideration. Other possible requirements under TSCA section 6(a) that EPA considered in combination under the primary alternative regulatory action, such as labels, warning signs, and recordkeeping, are discussed in Unit IV.B.

The primary alternative option EPA considered for the chlor-alkali diaphragm and sheet gasket categories was a prohibition to take effect over a longer time (five years), and the establishment of a risk-based performance standard, known as an existing chemical exposure limit (ECEL) to reduce inhalation exposures by workers and occupational non-users during that period prior to the prohibition. EPA developed an 8-hour time-weighted average (TWA) ECEL in support of risk management efforts on chrysotile asbestos under TSCA section 6(a). EPA calculated the ECEL to be 0.005 fibers/cc (f/cc) for inhalation exposures to chrysotile asbestos as an 8-hour TWA (Ref. 13).

Requirements to meet an ECEL would not include requirements for specific engineering or administrative controls; rather, the ECEL is a performance-based exposure limit that would allow regulated entities to determine how to most effectively meet the ECEL based on what works best for

their workplace, while following the hierarchy of controls to the extent feasible (*e.g.*, preferential use of methods which prevent generation or release of asbestos in the workplace rather than relying on respiratory protection to meet the ECEL; see Unit IV.B.1, Exposure Controls).

In general, industrial and commercial facilities are already familiar with the concept of permissible exposure limits (PELs) required by OSHA. Based on their familiarity with the PELs and corresponding methods of compliance, some industrial and commercial facilities may be able to implement an ECEL. EPA recognizes that an ECEL will require time and resources to prepare for and therefore did not propose to include it for the two-year interim period prior to the proposed prohibition date. It is also unknown whether facilities could, under the ECEL provision, routinely monitor at or below the ECEL or ECEL-action level with reasonable certainty. Additionally, there are uncertainties regarding whether facilities would need to routinely rely on the use of respiratory protection considering the engineering and administrative controls already in place and the effectiveness of the respiratory protection to ensure that air concentrations above the ECEL do not result in unreasonable risk (see Section 2.3.1.2 of the Risk Evaluation). For these reasons, EPA did not include in the proposed regulation requirements to meet an ECEL. However, the ECEL is included as an interim exposure reduction measure in the primary alternative regulatory action, based on the longer interim period prior to prohibition considered in the primary alternative regulatory action. Details of the ECEL requirement included in the primary alternative regulatory action, including how facilities could demonstrate compliance, are described in Unit IV.B.

In addition, EPA considered other requirements, such as requiring monitoring and recordkeeping to demonstrate compliance with the ECEL, or downstream notification to communicate the date of prohibition for manufacturing, processing and distribution in commerce. These requirements are described in Unit IV.B.

As required under TSCA section 6(d), any rule under TSCA section 6(a) must specify the date of compliance, which shall be as soon as practicable with a reasonable transition period but begin no later than five years after the date of promulgation of the rule. These proposed compliance dates are detailed in Unit IV.A.

Because a determination has been made that chrysotile asbestos presents an unreasonable risk to health within the United States or to the environment of the United States, pursuant to TSCA section 12(a)(2), this proposed rule would apply to chrysotile asbestos even if being manufactured, processed, or distributed in commerce solely for export from the United States.

After considering the different regulatory requirements under TSCA section 6(a), consideration of alternatives (described in Unit III.B.4.), compliance dates, and other requirements under TSCA section 6(c), EPA developed the proposed regulatory action described in Unit IV.A. and a primary alternative regulatory action described in Units IV.B.1., IV.B.5, IV.B.6, and IV.B.7.

4. Consideration of Alternatives in Deciding Whether To Prohibit or Substantially Restrict Chrysotile Asbestos

In selecting among prohibitions and other restrictions available under TSCA section 6(a), EPA must under section 6(c)(2)(A) and (B) consider and factor in, to the extent practicable, the health and environmental effects and exposures of the chemical, the benefits of the chemical for various uses and the reasonably ascertainable economic consequences of the rule (described in Unit V.). Further, under TSCA section 6(c)(2)(C) and based on the information published under TSCA section 6(c)(2)(A), in deciding whether to prohibit or restrict 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 also 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 proposed prohibition or other restriction takes effect.

a. Health and environmental effects of the chemical alternatives or substitute methods:

In considering the potential chemical alternatives or substitute methods for chrysotile asbestos for the conditions of use evaluated in the risk evaluation, EPA notes that chrysotile asbestos is not currently the primary substance most commonly used in these conditions of use, nor has it been for the last decade. Chlor-alkali asbestos diaphragms, sheet gaskets for chemical production, aftermarket automotive breaks, oilfield brake blocks, other gaskets and other friction products containing chrysotile asbestos are relatively uncommon in the market space, as described in the risk evaluation. There are a number of alternatives to asbestos in these conditions of use that make up the majority of the market share and have been preferentially used for some time, in part as a result of the known severe and adverse health effects related to asbestos exposure. Based on the information published under TSCA section 6(c)(2)(A), EPA does not expect any adverse impacts to human health and the environment to result from the further reduction of asbestos in these conditions of use when compared to the continued use of asbestos.

EPA acknowledges that substitute technologies for asbestos-containing diaphragms in chlor-alkali production use an increased concentration of per- and polyfluoroalkyl substances (PFAS) relative to the amount of PFAS compounds contained in asbestos-containing diaphragms. As discussed in the Economic Analysis, the three types of chlor-alkali production technologies commonly used in the United States vary in their use of PFAS. Non-asbestos diaphragms have a higher concentration of polytetrafluoroethylene (PTFE, a polymeric perfluorinated substance) than asbestos-containing diaphragms, and non-asbestos membranes are made of PTFE, perfluorinated carboxylic acids and perfluorosulfonic acids. Therefore, the transition away from asbestos-containing diaphragms could result in greater usage and release of PFAS. EPA lacks information to determine whether increased usage is likely to cause increased release of PFAS at chlor-alkali facilities that currently rely on asbestos-containing diaphragms, chlor-alkali facilities that do not currently use asbestos-containing diaphragms that may expand their production as a result of the regulation, upstream facilities that produce membranes, or upstream facilities that produce perfluorinated fibers used in non-asbestos diaphragms. EPA requests public comment with monitoring data and other information that would allow the Agency to assess how a transition away from asbestos containing diaphragms may affect exposures to PFAS released by chlor-alkali facilities. Despite these uncertainties about possible greater use and release of PFAS, EPA believes the benefits of removing chrysotile asbestos, a known human carcinogen that causes an aggressive and deadly cancer (mesothelioma), from continued use in the United States, are significant even though there are uncertainties regarding the potential additional exposure to PFAS that might result from this action.

b. Technical feasibility, economic feasibility, and reasonable availability of the chemical alternatives or substitute methods:

As mentioned, there are a number of alternatives to asbestos in these conditions of use that make up the majority of the market share and have been preferentially used for some time. EPA received input from stakeholders regarding their concerns about alternatives to chrysotile asbestos. EPA expects non-asbestos diaphragms and membrane cells will be the likely substitutes to asbestos diaphragms. Each

chlor-alkali industry member consulted expressed concerns about the economic feasibility of transitioning to asbestos free technology (Refs. 14, 15, 16, 17, and 20), indicating that would take a significant amount of time. Several stakeholders provided feedback on alternatives to chrysotile asbestos for the sheet gasket use in chemical production. Generally, these stakeholders described how the transition from asbestos use for titanium dioxide production would require significant capital investment. One stakeholder noted they have a titanium dioxide production facility located in Taiwan that uses asbestos-free gaskets. The stakeholder, however, stated that the technology used in the Taiwan facility would not suit certain domestic titanium dioxide plants because the large diameter flanges in the domestic plants result in performance issues with the asbestos-free gaskets (Ref. 14). Non-asbestos technologies already dominate the market for other gaskets, oilfield brake blocks, brakes and other friction products. Although, stakeholders indicated the advantages of using asbestos (*e.g.*, asbestos in automotive drum brakes advantages include thermal stability, flexibility, resistance to wear, and low cost), and limitations of the non-asbestos replacements (*e.g.*, non-asbestos replacements in brake blocks have a useful life half that of products containing asbestos, are more expensive than asbestos-containing products, and are subject to sudden failure) (Ref. 2). Non-asbestos aftermarket automotive brakes are estimated to cost an average of \$4 more than brakes containing asbestos. Asbestos-free brake blocks are also more expensive than those containing asbestos according to a company importing asbestos brake blocks. EPA was unable to identify any companies currently supplying or using other gaskets or other friction products containing asbestos, so the Agency does not have information on the cost differentials between products that contain asbestos and those that are asbestos-free. Additional information is available in the risk evaluation (Ref. 1) and economic analysis (Ref. 2).

IV. Proposed and Primary Alternative Regulatory Actions

This Unit describes EPA's proposed regulatory action to address the unreasonable risk identified for chrysotile asbestos under certain conditions of use in EPA's Risk Evaluation for Asbestos Part 1, so that chrysotile asbestos no longer presents such risk (Ref. 1). In addition, as indicated by TSCA section 6(c) (2)(A), EPA must consider the cost and benefits and the cost effectiveness of the proposed regulatory action and one or more primary alternative regulatory actions. In the case of chrysotile asbestos, the proposed regulatory option is described in Unit IV.A. and the primary alternative regulatory action is described in Unit IV.B.

A. Proposed Regulatory Action

EPA is proposing under TSCA section 6(a) to: Prohibit manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos in bulk form or as part of: Chrysotile asbestos diaphragms in the chlor-alkali industry; chrysotile asbestos-containing sheet gaskets in chemical production; chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; and other vehicle friction products. EPA is also proposing to prohibit manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use and other chrysotile asbestos-containing gaskets for consumer use. EPA is also proposing disposal requirements and recordkeeping requirements under which regulated parties would document compliance with the proposed disposal requirements. EPA does not intend the proposed prohibitions on processing or distribution in commerce to prohibit any processing or distribution in commerce incidental to disposal of the chrysotile asbestos waste in accordance with the proposed requirements.

Under this proposed approach and pursuant to TSCA section 6(d)(1), the manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk form or as part of diaphragms in the chlor-alkali industry and for asbestos-containing sheet gaskets used in chemical production would be prohibited two years after the effective date of the final rule.

Manufacture (including import), processing, distribution in commerce, and commercial use of: Chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; other chrysotile asbestos-containing vehicle friction products; and asbestos-containing gaskets would be prohibited 180 days after the effective date of the final rule. Disposal and recordkeeping requirements would take effect 180 days after the effective date of the final rule. As noted in Unit III.B.2.e, these prohibitions would not apply to chrysotile asbestos in the NASA Super Guppy Turbine aircraft, which is a condition of use for which EPA did not make a determination of unreasonable risk.

EPA requests comment on any suggestions to address the unreasonable risk identified while recognizing that chrysotile asbestos is a natural occurring fiber that may be unintentionally present (e.g., by incorporating a *de minimis* level). In particular, in lieu of proposing a *de minimis* provision for chrysotile asbestos with this proposed rule, EPA requests comment on incorporating a *de minimis* provision for chrysotile asbestos where the regulatory requirements of the rule would apply: (1) Only at concentrations in a product greater than or equal to 0.1% by weight; (2) at any concentration in a product, if intentionally added; or (3) above another *de minimis* level.

Other national governments, in their prohibitions of asbestos, have used threshold levels or other provisions to limit the regulation of products that contain trace amounts of chrysotile asbestos present as unintentional or naturally occurring fibers in other material obtained from mineral sources, such as brake pads and other friction materials (Ref. 4).

1. Prohibition on manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets in chemical production.

EPA consulted with several companies who manufacture, process, distribute, and use chrysotile asbestos diaphragms in the chlor-alkali industry and process and use chrysotile asbestos-containing sheet gaskets in chemical production. Each company stated that while alternatives may exist, they could take many years to implement. EPA considered this information while developing the proposed regulatory option and compliance timeframes.

EPA proposes to prohibit manufacturing (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos under TSCA sections 6(a)(2) and 6(a)(5) in bulk form or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets used in chemical production. The prohibition would take effect two years from the effective date of the final rule. Pursuant to TSCA section 6(d)(1), when EPA elects to ban or phase-out a chemical substance, the start of the ban or phaseout must be as soon as practicable but not later than five years after the date of promulgation of the rule, and the date for full implementation must be as soon as practicable thereafter. EPA believes safer, economically viable alternatives are available for these conditions of use. Specifically, for the chrysotile asbestos diaphragms, EPA is aware of one company already transitioning to exclusive use of alternative technologies such as membrane and non-asbestos diaphragm technologies. All three domestic companies that use chrysotile asbestos diaphragms currently also use membrane or non-asbestos diaphragms at their chlor-alkali facilities.

The plants range in age from 40 to 123 years old, although some have had new capacity added as recently as 16 years ago, and others may have had recent refurbishments. EPA understands from industry stakeholder consultations that there are no plans to build new chlor-alkali plants that use chrysotile asbestos technology for the production of chlorine and caustic soda (Refs. 14, 15, and 16). One of the three remaining chlor-alkali companies that continue to use chrysotile-asbestos technology domestically stated to EPA in 2017 that they plan to voluntarily discontinue the use chrysotile asbestos (Ref. 18).

Globally, the chlor-alkali industry has transitioned away from chrysotile asbestos diaphragms to membrane-based technology or asbestos-free diaphragm technology due to prohibitions or impending prohibitions of chrysotile asbestos and the advantages of asbestos-free technology including greater energy efficiency, and reduced waste handling and disposal costs for asbestos-free materials. Only one chlor-alkali plant that uses chrysotile asbestos technology remains in operation in the European Union (EU), but it will phase-out of chrysotile asbestos use no later than 2025 to comply with the EU prohibition on chrysotile asbestos use by that date (Ref. 19). One chlor-alkali plant utilizing chrysotile asbestos technology remains in operation in Canada (Ref. 11). The Canadian government prohibited chrysotile asbestos use in the chlor-alkali industry with a compliance date of no later than the end of 2029.

EPA considers the proposed two-year effective date for the prohibition on manufacturing (including import), processing, distribution in commerce, and use of chrysotile asbestos in bulk form and as part of chrysotile asbestos diaphragms in the chlor-alkali industry to be achievable by the industry, thus meeting the “as soon as practicable” requirement of TSCA section 6(d)(1). EPA believes an aggressive transition away from chrysotile asbestos will spur adoption of superior technology and that potential supply disruptions could be addressed in the shorter term through increased importing of caustic soda and derivatives of chlorine and caustic soda, and over time with increased production at existing non-asbestos diaphragm or membrane-based chlor-alkali plants. However, EPA is aware that public drinking water and wastewater systems have experienced substantial price increases for chlor-alkali products related to supply shortages and COVID pandemic impacts. EPA has insufficient information to fully assess the impact of this proposed rule on the cost or availability of water treatment chemicals. EPA requests public comment on the potential impact of changes in supply on the availability and cost of water treatment chemicals, including both chlorine and caustic soda used directly in water treatment as well as the potential impact on the cost of other water treatment chemicals derived from chlorine or caustic soda.

Chrysotile asbestos-containing sheet gaskets are used in limited chemical production applications, particularly for the manufacture of titanium dioxide. EPA believes alternative gaskets are available that can meet the high-temperature and pressure conditions for which the chrysotile asbestos-containing gaskets are currently used. At least one manufacturer of titanium dioxide uses only asbestos-free gaskets (Ref. 14) and the two-year transition away from existing use of chrysotile gaskets should be feasible based on the availability of these substitutes.

EPA requests comment on whether the proposed prohibition date would both provide a reasonable transition period and be as soon as practicable under TSCA section 6(d)(1). EPA requests specific information to support or refute its assumption that plants using asbestos diaphragms will convert to non-asbestos technologies, and the timeframes required for such conversions. EPA is requesting comments on potential alternative transition strategies and timing to implement those strategies. EPA

is requesting specific information regarding potential barriers to achieving the proposed prohibition date while considering the supply of chlor-alkali chemicals and on the potential impact of this transition on the market price of chlor-alkali chemicals.

2. Prohibition on manufacture (including import), processing, distribution in commerce, and commercial use of: Chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; asbestos-containing vehicle friction products; and other asbestos-containing gaskets.

EPA is proposing under TSCA section 6(a)(2) and 6(a)(5) to prohibit manufacturing (including import), processing, distribution in commerce and commercial use of: Chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; other asbestos-containing vehicle friction products (excluding the NASA SGT use); and other asbestos-containing gaskets. Based upon discussions with trade groups and industry representatives (Refs. 14, 15, 16, 17, 20 and 21), EPA believes chrysotile asbestos is almost entirely phased out for these product categories. Thus, these prohibitions would not only address the unreasonable risk EPA has identified, but also, for this reason, upon consideration of the TSCA section 6(c)(2)(A) factors can achieve that statutory requirement without an undue economic burden on these industries overall. EPA is proposing that the prohibition take effect 180 days after the effective date of the final rule for these categories of use. In the context of these specific uses of chrysotile asbestos, which EPA believes are almost entirely phased out, EPA has no information indicating that these proposed compliance dates are not practicable; however, EPA is requesting public comment regarding the timing of the prohibition. This additional amount of time from the proposed regulatory option is meant to account for stakeholders who may not have engaged with EPA in advance of this proposed rule, and who may potentially have difficulty immediately transitioning away from chrysotile asbestos in the manufacture, processing, distribution, and use, of chrysotile asbestos-containing brake blocks, chrysotile asbestos-containing aftermarket automotive brakes and linings, other chrysotile asbestos-containing vehicle friction products and other chrysotile asbestos-containing gaskets.

3. Prohibition on manufacture (including import), processing, and distribution in commerce for aftermarket automotive chrysotile asbestos-containing brakes/linings and other asbestos-containing gaskets for consumer use.

EPA is proposing under TSCA section 6(a)(2) to prohibit the manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use and of other chrysotile asbestos-containing gaskets for consumer use. EPA is proposing that the prohibition on manufacture (including import), processing and distribution in commerce for consumer use take effect 180 days after the effective date of the final rule for these categories of use, identical to the equivalent proposed prohibition on manufacture (including import), processing, and distribution in commerce of chrysotile asbestos for commercial use. EPA has no information indicating that the proposed compliance dates for these prohibitions are not practicable for these consumer use-related categories. While EPA does not have the authority under TSCA section 6(a)(5) to regulate consumer use or under TSCA section 6(a)(6) to regulate disposal by someone other than a manufacturer, processor, or a person who uses or disposes of the substance commercially, prohibiting the manufacture (including import), processing, and distribution in commerce of these products for both commercial and consumer uses will remove them from the market and therefore effectively eliminate new instances of consumer use and the associated disposals from such use.

4. Other requirements.

a. Disposal:

EPA proposes to cross reference existing EPA and OSHA regulations that address asbestos-containing waste disposal. By following these existing regulations, worker and ONU exposure to chrysotile asbestos during disposal can be prevented.

For this rule, EPA proposes that for each condition of use, regulated entities must adhere to waste disposal requirements described in OSHA's Asbestos General Industry Standard in 29 CFR 1910.1001, including 1910.1001(k)(6), which requires waste, scrap, debris, bags, containers, equipment, and clothing contaminated with asbestos that are consigned for disposal to be disposed of in sealed impermeable bags or other closed, impermeable containers. EPA expects regulated entities to follow these requirements for unused and end-of-use products containing chrysotile asbestos

Additionally, for the chrysotile asbestos diaphragm condition of use, as well as oilfield brake blocks, other vehicle friction products, and any commercial use of other gaskets and aftermarket automotive brakes and linings, EPA is proposing to cross-reference the disposal requirements of Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR part 61, subpart M) at 40 CFR 61.150. The asbestos NESHAP reduces exposure to airborne asbestos by generally requiring sealing of asbestos-containing waste material from regulated activities in a leak-tight container and disposing of it in a landfill permitted to receive asbestos waste. EPA is not proposing to cross-reference this same NESHAP waste disposal provision for the disposal of chrysotile asbestos-containing waste from sheet gasket processing and use, because EPA did not find unreasonable risk for the disposal of sheet gaskets. However, EPA is requesting comment on this, since, according to industry communications to EPA, they already follow these work practices.

EPA is also proposing to require that, upon disposal, each manufacturer (including importer), processor, and distributor of chrysotile asbestos, including as part of products and articles, for consumer uses subject to this proposed regulation, dispose of such items in accordance with specified disposal provisions. These consumer uses are aftermarket automotive brakes and linings, and other gaskets. These consumer use supply chain disposal requirements are consistent with those proposed for disposers of aftermarket automotive brakes and linings, and other gaskets, intended for commercial use. EPA does not generally have TSCA section 6(a) authority to directly regulate consumer use and disposal, but under TSCA section 6(a) EPA may nonetheless regulate the disposal activity of suppliers of these products, including importers, wholesalers and retailers of asbestos-containing aftermarket automotive brakes and linings, and other gaskets.

The proposed disposal requirements would take effect 180 days after the effective date of the final rule. EPA has no information indicating that this 180-day compliance period, after the 60-day effective date of the final rule, is not practicable for regulated entities to comply with the proposed disposal provisions; however, EPA requests comment on whether the proposed time is adequate. EPA also requests comments on the practicability of making the proposed disposal requirements take effect sooner than 180 days after the final rule effective date.

b. Recordkeeping for disposal:

EPA is also proposing that each person who disposes of any chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to the disposal provisions of this proposed rule must retain any records generated pursuant to, or otherwise documenting compliance with specified disposal regulations. These records must be retained in one location at the headquarters of the company, or at the facility for which the records were generated, and they must be retained for five years from the date of generation. In addition, EPA is exercising its authority under TSCA section 6 to apply recordkeeping requirements to distributors of asbestos-containing products who are not also manufacturers (including importers), or processors identified in the risk evaluation.

The proposed recordkeeping requirements would take effect 180 days after the effective date of the final rule. EPA has no information indicating that a 180-day period is not practicable for regulated entities to modify their recordkeeping systems to comply with the proposed rule; however, EPA requests comment on whether the proposed time is adequate. EPA also requests comments on the practicability of making the proposed recordkeeping requirements take effect sooner than 180 days and whether additional recordkeeping requirements are necessary to further document compliance with this proposed rule.

B. Primary Alternative Regulatory Action

As indicated by TSCA section 6(c)(2)(A), EPA must consider the cost and benefits and the cost effectiveness of the proposed regulatory action and one or more primary alternative regulatory actions. EPA's primary alternative regulatory action is to: Prohibit manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos in bulk form or as part of: Chrysotile asbestos diaphragms in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets in chemical production (with prohibitions taking effect five years after the effective date of the final rule) and require, prior to the prohibition taking effect, compliance with an existing chemicals exposure limit (ECEL) for the processing and commercial use of chrysotile asbestos for these uses; and to prohibit manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; and other vehicle friction products (with prohibitions taking effect two years after the effective date of the final rule and with additional requirements for disposal). The primary alternative regulatory action also includes prohibitions on manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use and other chrysotile asbestos-containing gaskets for consumer use (with prohibitions taking effect two years after the effective date of the final rule). The primary alternative regulatory action also would require disposal of chrysotile asbestos-containing materials in a manner identical to the proposed option, with additional provisions for downstream notification and signage and labeling. EPA does not intend the primary alternative regulatory action's prohibitions on processing or distribution in commerce to prohibit any processing or distribution in commerce incidental to disposal of the chrysotile asbestos waste in accordance with the proposed requirements.

1. Primary alternative regulatory action for prohibition of manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets in chemical production.

As described in Unit IV.A, EPA consulted with several companies in the chlor-alkali industry and companies that process and use chrysotile asbestos-containing sheet gaskets in chemical production. While EPA expects the compliance date in the proposed regulatory option is feasible, it is possible that the required changes could take longer than expected to implement for some.

Accordingly, and pursuant TSCA section 6(a)(2) and 6(a)(5), EPA presents as a primary alternative regulatory action, a prohibition on the manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and for sheet gaskets used in chemical production, with an effective date five years after the effective date of the final rule, with interim controls for processing and commercial use as described in Unit IV.B.2.

2. Requiring as interim control an existing chemical exposure limit (ECEL) for: Processing and commercial use of chrysotile asbestos diaphragms in the chlor-alkali industry; and chrysotile asbestos-containing sheet gaskets in chemical production.

As part of the primary alternative regulatory action, EPA would require processors and commercial users to comply with an 8-hour existing chemical exposure limit (ECEL), during the interim period prior to prohibition, beginning 180 days after the effective date of the final rule, for the following conditions of use: (1) Processing and industrial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and (2) processing and industrial use of chrysotile asbestos-containing sheet gaskets in chemical products. EPA calculated the ECEL to be 0.005 fibers (f)/cubic centimeter (cc), for inhalation exposure to chrysotile asbestos as an 8-hour time-weighted average (TWA) for use in workplace settings based on incidence of lung cancer, mesothelioma and other cancers. The alternative action would include this interim measure to reduce exposures and address the unreasonable risk of injury to health resulting from inhalation exposures to chrysotile asbestos in an occupational setting. EPA expects that, if inhalation exposures in occupational settings are kept at or below the ECEL of 0.005 f/cc, a person reasonably likely to be exposed in the workplace, including workers and occupational non-users, would be protected against excess risk of cancer above the 1×10^{-4} ($1E-4$) benchmark resulting from chronic occupational exposure (Ref. 13). Based on this ECEL, the alternative action includes an ECEL-action level of 0.0025 f/cc as an 8-hour TWA, which initiates certain required activities such as periodic monitoring of exposures to chrysotile asbestos, as described in this unit. As described in Unit III.B.3., EPA recognizes that an ECEL will require time and resources to prepare for and therefore did not propose to include it for the two-year interim period prior to the proposed prohibition date. As part of an interim control measure, requirements to meet an ECEL could reduce exposures and address unreasonable risk during the interim period of time the regulated entities need for implementing prohibitions. This Unit provides additional details regarding implementation of the ECEL as an interim control measure as part of the primary alternative regulatory action.

EPA expects that, if this primary alternative regulatory action were to be implemented for these two use categories, workplaces may have the ability to implement an ECEL as part of an industrial hygiene program. Using the NIOSH hierarchy of controls (Ref. 27) (*i.e.*, in sequential order: Elimination, substitution, engineering controls, administrative controls and personal protective equipment (PPE)), workplaces that cannot eliminate the source or replace chrysotile asbestos with a substitute could use engineering and administrative controls to implement process changes to reduce exposures. EPA also expects that these workplaces could establish a monitoring program to demonstrate compliance with an ECEL. For example, workplaces that may be able to implement the ECEL include those that are

implementing the 8-hour threshold limit value-time weighted average (TLV-TWA) set by the American Conference of Governmental Industrial Hygienists (ACGIH), and the OSHA Permissible Exposure Limit (PEL), which are both 0.1 f/cc for asbestos. EPA expects that workplaces engaged in the following conditions of use may be able to implement an ECEL: Processing and industrial use of chrysotile asbestos diaphragms in the chlor-alkali industry and processing and industrial use of chrysotile asbestos-containing sheet gaskets in chemical products. Therefore, for the primary alternative regulatory action, EPA would require an ECEL for these conditions of use and any facility engaged in these conditions of use would be considered a regulated entity.

Specifically, under the primary alternative regulatory action, EPA would require that the regulated entity must ensure that no person in the workplace is exposed to an airborne concentration of chrysotile asbestos in excess of 0.005 f/cc as an 8-hour TWA.

Initial exposure monitoring. Under the primary alternative regulatory action, EPA would require the regulated entity to establish a baseline for the implementation of the ECEL by monitoring the personal breathing zone of all persons reasonably likely to be exposed (with personal monitoring samples outside the facepiece if the person is wearing respiratory protective equipment). Under this alternative action, the initial monitoring would be taken when the operating conditions are representative of the potential exposures of persons in the workplace, or of a representative sample of persons in each type of job task during every work shift who are reasonably likely to be exposed to chrysotile asbestos in the workplace. EPA expects that facilities would attempt to monitor a baseline for all of the tasks during the same timeframe; however, EPA understands that certain tasks occur less frequently, and EPA is soliciting comments regarding the timing of the initial exposure monitoring so that it is representative of all tasks involving chrysotile asbestos. If the regulated entity chooses a representative sample, such sampling will include persons who are the closest to the source of chrysotile asbestos, so that the monitoring results are representative of the most highly exposed persons in the workplace. If the regulated entity has existing monitoring data less than five years old that follows the initial exposure monitoring criteria and where a process change is not implicated, the regulated entity could choose to use this existing data as the initial exposure monitoring. EPA is soliciting public comments regarding any additional requirement needed to ensure that the initial exposure monitoring is representative of the exposures to chrysotile asbestos in the workplace.

Periodic exposure monitoring. Based on the results from the initial exposure monitoring, under the primary alternative regulatory action, EPA would require the regulated entity to conduct the following periodic monitoring:

- If any samples taken during the initial exposure monitoring reveal a concentration of airborne chrysotile asbestos at or above the ECEL-action level but at or below the ECEL, the regulated entity must repeat the exposure monitoring and in no case shall exceed six months. However, if the facility does not use chrysotile asbestos during those six months, then they do not have to conduct monitoring until the next six months and would need to document the fact that they are not using chrysotile asbestos.

- If any samples taken during the initial exposure monitoring reveal a concentration above the ECEL, the regulated entity must repeat the exposure monitoring at least every three months. The regulated entity may alter the exposure monitoring schedule from every three months to every six months if two consecutive monitoring events taken at least seven days apart indicate that the potential exposure has decreased to the ECEL or below, but it is at or above the ECEL-action level. Also, if the facility does not use chrysotile asbestos during those three months, then they do not have to conduct monitoring until the next three months and would need to document the fact that they are not using chrysotile asbestos.
- If the last monitoring was conducted more than five years previously, the regulated entity must conduct a new baseline monitoring.

EPA understands that explicitly increasing the frequency of testing may be a viable option and is soliciting comments regarding further shortening the maximum time interval between monitoring events.

Termination of exposure monitoring. Based on the results of the initial exposure monitoring or the periodic exposure monitoring, EPA is proposing that the regulated entity may terminate periodic exposure monitoring:

If all samples taken during the initial exposure monitoring reveal a concentration below the ECEL action level, the regulated entity may discontinue monitoring, except when additional exposure monitoring is required as described in this unit.

- If the periodic exposure monitoring statistically indicates that concentrations, are below the ECEL action level, the regulated entity may discontinue the monitoring, except when additional monitoring is required as described under *periodic exposure monitoring* or *additional exposure monitoring*. However, regulated entities must ensure that the last baseline monitoring event was conducted within the last five years.

EPA is soliciting public comments on the proposed conditions to terminate periodic monitoring for chrysotile asbestos.

Additional exposure monitoring. In addition to the initial and periodic exposure monitoring, under the primary alternative regulatory action, EPA would require that the regulated entity must, conduct new initial exposure monitoring followed by any necessary periodic or additional exposure monitoring including immediately after:

- Changes in the production volume, use rate, process, control equipment, personnel or work practices that may reasonably be anticipated to cause additional sources of exposure or result in increased exposure levels to chrysotile asbestos; and
- Start-up, shutdown, or malfunction of the facility that may reasonably be anticipated to cause additional sources of exposure or result in increased exposure levels to chrysotile asbestos.

However, the required additional exposure monitoring should not delay implementation of any necessary cleanup or other remedial action to reduce the exposures to persons in the workplace. In addition, under the primary alternative regulatory action, EPA would require use of respiratory protection by workers, ONUs, and any other person potentially exposed to chrysotile asbestos during cleanup or any other remedial actions to reduce exposures.

For each monitoring event, under the primary alternative regulatory action EPA would require that the regulated entities record dates, duration, and results of each sample taken, including all measurements that may be necessary to determine the conditions (*e.g.*, task duration, work site temperatures, etc.) that might have affected the monitoring results. In addition, under the primary alternative regulatory action, EPA would require: Documentation of the name, address, work shift, job classification, and work area of the person monitored. If the regulated entity is using area monitoring or a representative sampling monitoring, the same documentation will be needed of all other persons whose exposures the monitoring was not measured but whose exposure is intended to be represented by the area or representative sampling monitoring. In addition, EPA would require documentation of and type of respiratory protective device, if any, worn by the monitored person; or, if area monitoring is used, respiratory protective devices worn, if any, by persons in the area monitored; or if a representative sampling monitoring is used, respiratory protective devices worn, if any, by the persons whose exposure is represented by the monitoring. Also, under the primary alternative regulatory action, EPA would require use of appropriate sampling and analytical methods to determine asbestos exposure, including:

- Use of analytical method with a limit of detection below the ECEL-action level, so that the regulated entity is able to implement exposure controls, to determine the monitoring frequency according to the requirements described in this Unit, and to provide persons exposed to chrysotile asbestos with the respiratory protection required and described in this Unit.
- Use of analytical methods described in appendix A to 29 CFR 1910.1001 or as referenced in appendix A to 29 CFR 1910.1001, the NIOSH 7400 method;
- Compliance with the Good Laboratory Practice Standards at 40 CFR part 792; and
- Documentation of information regarding air monitoring equipment, including: Maintenance, performance tests, limits of detection, and any malfunctions.

EPA requests comment on the proposed air sampling and analytical methods as part of a chrysotile asbestos ECEL air monitoring requirement under the primary alternative regulatory option and specifically whether the required air sampling and analytical methods should require the use of transmission electron microscopy (TEM), or other microscopy, instead of phase contrast microscopy (PCM). PCM is the required microscopy analysis in Appendix A to 29 CFR 1910.1001 and the NIOSH 7400 method. In addition, EPA requests comments on the capacity of available methods to effectively sample, detect and analyze chrysotile asbestos at the ECEL and ECEL action level.

Exposure controls. EPA recommends and encourages the use of pollution prevention as a means of controlling exposures whenever practicable. Under the primary alternative regulatory action, EPA would require regulated entities to implement the ECEL through the use of the NIOSH/OSHA hierarchy of controls (*i.e.*, elimination, substitution, engineering controls, administrative controls, and PPE) and to refer to 29 CFR 1910.1001 (except for 29 CFR 1910.1001(c), which references the asbestos PEL for general industry), and 29 CFR 1926.1101 (except for 29 CFR 1926.1101(c), which references the asbestos PEL for construction). EPA would require that regulated entities document their efforts in an exposure control plan or through any existing documentation of the facility's safety and health program developed as part of meeting OSHA requirements or other safety and health standards. If elimination, substitution, engineering controls and administrative controls are not sufficient to reduce exposures to or below the ECEL for all persons in the workplace, under the primary alternative regulatory action, EPA would require the regulated entity to use such controls to reduce chrysotile asbestos concentrations in the workplace to the lowest levels achievable and supplement these controls using respiratory protection. In such cases, under the primary alternative regulatory action, EPA would

require the regulated entity to provide those persons reasonably likely to be exposed to chrysotile asbestos by inhalation above the ECEL with respirators sufficient to ensure that their exposures do not exceed the ECEL, as described in this Unit. Under the primary alternative regulatory action, EPA would also require that the regulated entity documents their efforts to use elimination, substitution, engineering controls and administrative controls to reduce exposure to or below the ECEL.

Under the primary alternative regulatory action, EPA would require that the regulated entity documents in the exposure control plan the following:

- Identification of the exposure controls including: Elimination, substitution, engineering controls and administrative controls available to reduce exposures in the workplace to either at or below the ECEL or to the lowest level achievable, and the exposure controls selected based on feasibility, effectiveness, and other relevant considerations;
- If exposure controls were not selected, document the efforts identifying why these are not feasible, effective, or otherwise not implemented;
- Implementation of exposure controls selected, including proper installation, maintenance, training or other steps taken;
- Regular inspections, evaluations, and updating of the exposure controls to ensure effectiveness and confirmation that all persons are using them accordingly; and
- Occurrence and duration of any start-up, shutdown, or malfunction of the facility that causes air concentrations above the ECEL and subsequent corrective actions taken during start-up, shutdown, or malfunctions to mitigate exposures to chrysotile asbestos.

Personal protective equipment (PPE). As part of this primary alternative regulatory action, where engineering and administrative controls are not feasible to reduce the air concentration below the ECEL or inhalation exposure is still reasonably likely to persons in the workplace, EPA would require the regulated entity to determine the level of respiratory protection needed. EPA is proposing that the regulated entity refer to OSHA's General Requirements for Personal Protective Equipment standard at 29 CFR 1910.132 for application of a PPE program. EPA is also proposing that the regulated entity select the required respiratory protection as described in this unit and also refer to OSHA's Respiratory Protection standard at 29 CFR 1910.134, and the respiratory protection provision of the Asbestos standard for general industry at 29 CFR 1910.1001(g) for directions on how to implement a respiratory protection program.

Required respiratory protection. EPA is proposing to require under the primary alternative regulatory action the following respiratory protection, after consideration and implementation of all other practicable controls, such as engineering and administrative controls, whenever exposure monitoring reveals an air concentration, measured as an 8-hour TWA, that exceeds the ECEL (0.005 f/cc). A respirator affording higher levels of protection than the following proposed required respirator may be used.

If the measured exposure concentration is at or below 0.005 f/cc (ECEL): No respiratory protection is required.

- If the measured exposure concentration is less than or equal to 0.05 f/cc (10 times the ECEL), the respirator protection required is: (i) Half-mask air-purifying respirator other than a disposable respirator, equipped with high-efficiency filters (*i.e.*, a filter that is at least 99.97% efficient against mono-dispersed particles of 0.3 μm (micrometers) in diameter or higher).

If the measured exposure concentration is less than or equal to 0.25 f/cc (50 times the ECEL):
Full-facepiece air-purifying respirator equipped with high-efficiency filters.

- If the measured exposure concentration is less than or equal to 0.50 f/cc (100 times the ECEL): The respirator protection required is any powered air-purifying respirator equipped with high-efficiency filters (*i.e.*, a filter that is at least 99.97% efficient against mono-dispersed particles of 0.3 μm (micrometers) in diameter or higher) or any supplied-air respirator operated in continuous-flow mode.
 - If the measured exposure concentration is less than or equal to 5 f/cc (1,000 times the ECEL): The respirator protection required is a full-facepiece supplied air respirator operated in pressure-demand mode.
 - If the measured exposure concentration is more than 5 f/cc (1,000 times the ECEL): The respirator protection required is a full-facepiece supplied-air respirator operated in pressure-demand mode, equipped with an auxiliary positive-pressure self-contained breathing apparatus.

Worker participation: EPA encourages regulated entities to consult with workers on the conduct and development of exposure control plans and PPE program. EPA is proposing to require entities to provide workers with access to the exposure control plans, exposure monitoring records, and PPE program implementation (such as fit-testing and other requirements as described in 29 CFR 1910.134) and documentation.

Notification of monitoring results. As part of the primary alternative regulatory action, EPA is proposing to require that within 15 working days after receipt of the results of any exposure monitoring, the regulated entity must notify each person whose exposure is represented by that monitoring in writing, either individually to each person or by posting the information in an appropriate and accessible location. The notice must identify the ECEL, the exposure monitoring results, and any respiratory protection required in response to the exposure monitoring results. Also, the notice must include a description of the actions taken by the regulated entity to reduce inhalation exposures to or below the ECEL or refer to a document available to the person which states the actions to be taken to reduce exposures. In addition, the notice should be in plain English and understandable to the average worker that is exposed; for example: “Based on the monitoring conducted on March 15, 2022, the exposure to chrysotile asbestos by workers installing gaskets was 0.03 f/cc. This concentration is above the limit set by EPA to protect workers, and therefore the company is providing half-mask air-purifying respirators (not disposable respirators), equipped with high-efficiency filters to workers. Workers can access the exposure control plans, exposure monitoring records, and PPE program implementation and documentation at the office during regular business hours.”

Recordkeeping: To support and demonstrate compliance, EPA is proposing under this primary alternative regulatory action, that the regulated entities must retain compliance records for five years, unless a longer retention time is required under 29 CFR 1910.1020. The records proposed by EPA to be retained by regulated entities include:

- Exposure control plan;
- Exposure monitoring records;
- Notifications of exposure monitoring results; and
- PPE program implementation and documentation.

3. Solicitation of public comment on interim workplace controls prior to prohibition of processing and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms in the chlor-alkali industry; and for chrysotile asbestos-containing sheet gaskets used in chemical production.

EPA is proposing to prohibit manufacturing, processing, commercial use, and distribution of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms for use in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets used in chemical production two years after the effective date of the final rule. EPA recognizes that an ECEL will require time and resources to prepare for and did not propose to include it for the two-year interim period prior to the proposed prohibition date. However, EPA seeks public comment, including data on costs and feasibility, on requiring compliance with an ECEL during the period beginning 180 days after the effective date of the final rule and continuing until the proposed prohibition date for processing and commercial use of these uses of chrysotile asbestos.

4. Compliance date for the prohibition of manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets used in chemical production.

For the proposed prohibition on manufacturing, processing, distribution, and commercial use of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and for chrysotile asbestos-containing sheet gaskets used in chemical production uses, EPA is proposing that the prohibition begin two years after the effective date of the final rule based upon several considerations, including the existence of alternatives. As part of the primary alternative regulatory action, EPA is also taking comment on the prohibition beginning five years after the effective date of the final rule. EPA proposes that the final rule would take effect 60 days after publication of the final rule.

EPA held meetings with several of the processors and industrial users of chrysotile asbestos for these conditions of use. These companies stated to EPA that the transition to asbestos-free technology could take many years, although the companies processing and using chrysotile asbestos for these uses stated that research on asbestos alternatives has been ongoing. Each company did express that conversion to an alternative was possible but would require significant retooling of a facility, testing new processes, and other costly measures. However, these companies did not provide EPA with delineated cost estimates or a detailed timeline for the conversion process (Refs. 15, 16, 17, and 18).

EPA acknowledges that a prohibition on manufacturing (including import), processing, distribution and use of chrysotile asbestos diaphragms will require significant infrastructure changes for the chlor-alkali plants continuing to use the chrysotile asbestos diaphragm technology. It is possible that chlor-alkali facilities using non-asbestos technology could expand production to meet supply shortfalls induced by a prohibition on chrysotile asbestos diaphragms, but such expansion could also take time. Imports of caustic soda or chemicals derived from chlorine or caustic soda may increase in order to make up for short-term supply shortfalls. Short-term supply shortages of chlorine, caustic soda, and derivative chemicals are likely to lead to price increases experienced by both industrial and commercial users, some of which may be passed along to final consumers of products made with these inputs.

EPA seeks comment on a prohibition compliance date that under TSCA sections 6(d)(1) would be both “as soon as practicable” and “provide for a reasonable transition period.” Information that will be helpful includes the specific and detailed timelines to build asbestos-free facilities or to convert existing asbestos-using facilities to asbestos-free technology and the availability of asbestos-free technology. EPA is also requesting specific information regarding potential barriers to achieving the proposed prohibition date while considering the supply of chlor-alkali chemicals. EPA is also requesting comment on the potential impact of this transition on the market price of chlor-alkali chemicals, including the potential impact of a decrease in availability of diaphragm-grade caustic soda on both the production and cost of water treatment chemicals, including both caustic soda used directly in water treatment as well as the potential impact on the cost of other water treatment chemicals derived from caustic soda.

Alternatively, EPA could grant an exemption for these uses under TSCA section 6(g). Under the authority of TSCA section 6(g), EPA may consider granting a time-limited exemption for a specific condition of use for which EPA finds: That the specific condition of use is a critical or essential use for which no technically and economically feasible safer alternative is available, taking into consideration hazard and exposure; that compliance with the proposed requirement, as applied with respect to the specific condition of use, would significantly disrupt the national economy, national security, or critical infrastructure; or that the specific condition of use of the chemical substance, as compared to reasonably available alternatives, provides a substantial benefit to health, the environment, or public safety. EPA is aware that chlor-alkali chemicals are important to the national economy and operation of critical infrastructure, including: Water and Wastewater Systems Sector, Chemical Production Sector, Manufacturing Sector, Defense Industrial Base Sector, Emergency Services Sector, Energy Sector, Food and Agriculture Sector, and Healthcare and Public Health Sector.

Should EPA find that justification exists for such an exemption, an analysis and reasoning will be published in the final rule. EPA seeks any public comment that that favors or disfavors EPA using TSCA section 6(g) authority for chrysotile asbestos diaphragms used in the chlor-alkali industry or chrysotile asbestos-containing sheet gaskets used in chemical production. Since any decision made by EPA under TSCA section 6(g) must be through a rulemaking, EPA believes the best means to issue an exemption would be through this rulemaking process and careful analysis of reasonably available information which supports a TSCA section 6(g) exemption. A rulemaking under TSCA section 6(g) also allows EPA to include reasonable conditions to protect health while achieving the purposes of the exemption. To that end, EPA is considering requiring an ECEL and downstream notification, as described in Unit IV.B. Primary alternative regulatory action. EPA is seeking public comments on the possible conditions to be included if EPA issues a rulemaking under TSCA section 6(g) to provide a time limited exemption for chrysotile asbestos diaphragms used in the chlor-alkali industry or chrysotile asbestos-containing sheet gaskets used in chemical production.

5. Primary alternative regulatory action for manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; other asbestos-containing vehicle friction products; and other asbestos-containing gaskets.

EPA's primary alternative regulatory action is to prohibit manufacture, processing, commercial use, and distribution of chrysotile asbestos containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; other asbestos-containing vehicle friction products; and other asbestos-containing gaskets two years after the effective date of the final rule. This

additional amount of time from the proposed regulatory option is meant to account for stakeholders who may not have engaged with EPA in advance of this proposed rule, and who may potentially have difficulty immediately transitioning away from chrysotile asbestos in the manufacture, processing, distribution, and use, of chrysotile asbestos-containing brake blocks, chrysotile asbestos-containing aftermarket automotive brakes and linings, other chrysotile asbestos-containing vehicle friction products and other chrysotile asbestos-containing gaskets. While EPA does not have specific knowledge of regulated entities that would have difficulty complying with a shorter compliance date, a period of two years may be more feasible for regulated entities who have yet to transition to asbestos-free technology. This amount of time would account for use of existing stocks, expiration of equipment like asbestos-containing brake blocks, and investment in asbestos-free technology.

As with the proposed regulatory action, this primary alternative action would not apply to NASA's Super Guppy Turbine aircraft use.

6. Primary alternative regulatory action for the disposal of chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; chrysotile asbestos-containing other vehicle friction products and other chrysotile asbestos-containing gaskets.

The primary alternative regulatory action would also require regulated entities, upon disposal, to dispose of chrysotile asbestos-containing brake blocks in the oil industry; chrysotile asbestos-containing aftermarket automotive brakes/linings; other chrysotile asbestos-containing vehicle friction products and other chrysotile asbestos-containing gaskets in a manner consistent with the waste disposal requirements described in the housekeeping provision (1910.1001(k)(6)) of OSHA's Asbestos standard for general industry and in conformance with the asbestos waste disposal requirements of the Asbestos NESHAP at 40 CFR 61.150 and any other applicable and existing law as may apply to the commercial disposal of chrysotile asbestos and chrysotile asbestos-containing products or article. This requirement would apply to any unused or end-of-use products for these uses.

7. Other provisions of the primary alternative regulatory action.

a. Prohibition on manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use and other chrysotile asbestos-containing gaskets for consumer use:

The primary alternative regulatory action would prohibit the manufacture (including import), processing, and distribution in commerce of aftermarket automotive chrysotile asbestos-containing brakes/linings for consumer use and of other asbestos-containing gaskets for consumer use two years after the effective date of the final rule. This additional amount of time from the proposed regulatory option aligns with the compliance dates provided for commercial use of these asbestos-containing articles. The rationale for this compliance date is the same as provided in that earlier Unit.

b. Downstream notification:

EPA would require as part of the primary alternative regulatory action under TSCA section 6(a)(3) that manufacturers (including importers), processors, and distributors of chrysotile asbestos in bulk form or as part of chrysotile asbestos diaphragms used in the chlor-alkali industry and chrysotile asbestos-containing sheet gaskets used in chemical production provide notification of the prohibitions through existing safety data sheets (SDS) by adding to sections 1(c) and 15 of the SDS the following language:

“This chemical/item is not and cannot be distributed in commerce (as defined in TSCA section 3(5)) or processed (as defined in TSCA section 3(13)) for commercial and consumer use after [prohibition date].”

The requirement under the primary alternative regulatory action would take effect 180 days after the effective date of the final rule in order to provide adequate time to undertake the changes to the SDS and ensure that all products in the supply chain include the revised SDS.

c. Primary alternative regulatory action for signage and labeling requirements:

EPA would also, pursuant to TSCA section 6(a)(3), require processors, and commercial users of chrysotile asbestos in bulk form or as part of chrysotile asbestos chlor-alkali diaphragms and chrysotile asbestos-containing sheet gaskets used in chemical production to post visible and clearly noticeable signs in the work area of the ECEL value, compliance with any monitoring requirements, and worker protection requirements in this rule. Such signs would be used where any worker or ONU may be exposed to chrysotile asbestos and according to the requirements for signage under 29 CFR 1910.1001(j)(4).

V. TSCA Section (c)(2) Considerations

The following is EPA's statement of effects, as required by TSCA section 6(c)(2)(A), with respect to this proposed rule as well as discussions under TSCA section 6(c)(2)(D) about replacement parts and under TSCA section 6(c)(2)(E) about articles.

A. Health Effects of Chrysotile Asbestos and the Magnitude of Human Exposure to Chrysotile Asbestos

EPA's analysis of the health effects of and magnitude of exposure to chrysotile asbestos is in the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos (Ref. 1). A summary is presented here. Many authorities have established causal associations between asbestos exposures and lung cancer and mesothelioma in humans based on epidemiologic studies. EPA identified in the literature a causal association between exposure to asbestos and cancer of the larynx and cancer of the ovary and suggestive evidence of a positive association between asbestos and cancer of the pharynx, stomach, and colorectum. EPA also identified increases in lung cancer and mesothelioma mortality in both workers and residents exposed to various asbestos fiber types, including chrysotile asbestos, as well as fiber mixtures. Mesothelioma tumors arise from the thin membranes that line the chest and abdominal cavities and surround internal organs.

Asbestos exposure is known to cause various non-cancer health outcomes as well, including asbestosis, non-malignant respiratory disease, deficits in pulmonary function, diffuse pleural thickening, and pleural plaques. Various immunological and lymphoreticular effects are suggested but not well-established.

For the conditions of use that drive unreasonable risk, populations exposed to chrysotile asbestos (including potentially exposed or susceptible subpopulations) include workers, ONUs, consumer users, and bystanders to consumers using products containing chrysotile asbestos. For these conditions of use EPA estimates that, annually, at least 144 workers and 276 ONUs are exposed to chrysotile asbestos at over 31 commercial operations either processing or using products containing chrysotile asbestos. Additional workers and ONUs are exposed to oilfield brake blocks and may potentially be exposed to other vehicle friction products and other gaskets. Each year, approximately 400 consumers are

potentially exposed to asbestos through the use of products containing chrysotile asbestos subject to this rule. The number of exposed bystanders is unknown to EPA. The breakdown by category of use is as follows:

- Diaphragms—100 workers and 100 ONUs at 9 sites;
- Sheet gasket stamping—4 workers and 8 ONUs at 4 sites;
- Sheet gasket use—22 workers and 150 ONUs at 5 sites;
- Oilfield brake blocks—Unknown;
- Aftermarket automotive brakes—15 workers and 15 ONUs at 12 sites;
- Other vehicle friction products—Unknown;
- Other gaskets—Unknown; and
- DIY mechanics—400 consumers and unknown bystanders.

More information on the derivation of these estimates is provided in the Economic Analysis for this rulemaking that can be found in the rulemaking docket (Ref. 2).

As discussed in Unit II.D., EPA did not evaluate hazards or exposures to the general population in the Part 1 asbestos risk evaluation.

B. Environmental Effects of Chrysotile Asbestos and the Magnitude of Exposure of the Environment to Chrysotile Asbestos

EPA's analysis of the environmental effects of and the magnitude of exposure of the environment to chrysotile asbestos are in the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos (Ref. 1). A summary is presented here.

Chrysotile asbestos may be released to the environment through industrial or commercial activities, such as processing raw chrysotile asbestos, fabricating/processing asbestos-containing products, or the dispersing of friable chrysotile asbestos during use, disturbance and disposal of asbestos-containing products.

Although this action is focused on chrysotile asbestos fiber type, some of the information in this section pertains to asbestos fibers in general. Asbestos is a persistent mineral fiber that can be found in soil, sediments, in the air and windblown dust, surface water, ground water and biota. Asbestos fibers are largely chemically inert in the environment. They may undergo minor physical changes, such as changes in fiber length or leaching of surface minerals, but do not react or dissolve in most environmental conditions.

In water, chrysotile asbestos will eventually settle into sediments (or possible biosolids) and can enter wastewater treatment plants. EPA's review of aquatic vertebrate and invertebrate studies indicated that chronic exposure to waterborne chrysotile asbestos at a concentration range of 10^4 - 10^8 fibers/L, which is equivalent to 0.01 to 100 million fibers per liter (MFL), may result in reproductive, growth and/or sublethal effects to fish and clams. In addition, acute exposure of clams to waterborne chrysotile asbestos at a concentration range of 10^2 - 10^8 fibers/L demonstrated reduced siphoning activity.

EPA has determined that there are minimal or no releases of asbestos to surface water associated with the conditions of use that EPA evaluated in the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos and that are the subject of this action.

C. Benefits of Chrysotile Asbestos for Various Conditions of Use

The only form of asbestos manufactured (including imported), processed, or distributed for use in the United States today is chrysotile asbestos. The United States Geological Survey (USGS) estimated that 300 metric tons of raw chrysotile asbestos were imported into the United States in 2020 (Ref. 3). This raw asbestos is used exclusively by the chlor-alkali industry and imported amounts between 2016 and 2020 ranged from 172 to 747 metric tons during a given year (Ref. 3).

In addition to the use of raw imported chrysotile asbestos by the chlor-alkali industry, EPA is also aware of imported asbestos-containing products; however, the imported volumes of those products are not fully known. The asbestos-containing products that EPA has identified as potentially being imported and used are sheet gaskets (which are imported in large sheets and cut to size domestically by a fabricator), oilfield brake blocks, aftermarket automotive brakes/linings, other vehicle friction products, and other gaskets. Chrysotile asbestos is chemically inert, durable, and able to effectively separate the anode and cathode chemicals in the electrolytic cells used in the chlor-alkali process. Asbestos-containing gaskets have been used in chemical production because they are resistant to cyclical high temperatures and immense pressure. During the manufacture of titanium dioxide, temperatures can exceed 1850 degrees Fahrenheit and pressures can be greater than 50 pounds per square inch. The physical properties of chrysotile asbestos including heat resistance make asbestos a useful material for uses where friction is produced and extreme heat is generated, including its application in brakes, gaskets and other vehicle friction product uses considered in this proposed rule.

D. Replacement Parts Under TSCA Section 6(c)(2)(D)

TSCA section 6(c)(2)(D) states that EPA shall exempt from TSCA section 6(a) rules replacement parts for complex durable goods and complex consumer goods that are designed prior to the publication of a final risk management rule, unless such replacement parts contribute significantly to the risk, identified in a risk evaluation conducted under TSCA section 6(b)(4)(A), to the general population or to an identified potentially exposed or susceptible subpopulation. TSCA section 6(c)(2)(D) defines complex consumer goods as electronic or mechanical devices composed of multiple manufactured components, with an intended useful life of three or more years, where the product is typically not consumed, destroyed, or discarded after a single use, and the components of which would be impracticable to redesign or replace. The term “complex durable goods” means manufactured goods composed of 100 or more manufactured components, with an intended useful life of five or more years, where the product is typically not consumed, destroyed or discarded after a single use. Several of the conditions of use addressed by this proposed rule impact these replacement part categories.

Aftermarket automotive brakes/linings are replacement parts for automobiles and other vehicles. Other asbestos-containing gaskets may be available as both new and replacement parts on utility and other vehicles. Oilfield brake blocks are replacement parts for the drilling rigs used in the oil industry. These vehicles and drilling rigs are composed of numerous components, manufactured separately and assembled together into a machine designed for a useful life of at least three years if properly maintained. By their nature, EPA believes these meet the TSCA definition of complex durable goods. In the Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos, however, EPA found unreasonable risk from use and disposal of chrysotile asbestos-containing brake blocks in the oil industry; aftermarket automotive chrysotile asbestos-containing brakes/linings; and other asbestos-containing gaskets. EPA's risk evaluation evaluated scenarios involving these replacement parts, and EPA proposes to find

that the replacement parts contribute significantly to the identified unreasonable risk for these conditions of use to the potentially exposed or susceptible subpopulations identified in the risk evaluation.

Accordingly, EPA is not exempting replacement parts from regulation in the proposed rule.

E. Article Considerations Under TSCA Section 6(c)(2)(E)

EPA is proposing to regulate the manufacture, processing, and distribution in commerce of articles containing chrysotile asbestos. TSCA section 6(c)(2)(E) states that in selecting among prohibitions and other restrictions, the Administrator shall apply such prohibitions or other restrictions to an article or category of articles containing the chemical substance or mixture only to the extent necessary to address the identified risks from exposure to the chemical substance or mixture from the article or category of articles so that the substance or mixture does not present an unreasonable risk of injury to health or the environment identified in the risk evaluation conducted in accordance with section 6(b)(4)(A). TSCA does not define “article,” but based on the proposed definition of “article” in the proposed rule, the conditions of use subject to this proposed regulation include articles, *e.g.*, sheet gaskets, brake blocks, brake/linings, other gaskets and other vehicle friction products.

Except for bulk chrysotile asbestos imported for use in asbestos diaphragms, all of the other conditions of use that are the subject of this proposed regulation involve the use and/or disposal of products or articles containing chrysotile asbestos. For each condition of use, the article is subject to circumstances during use that change or alter the article as a direct result of the use. Releases of chrysotile asbestos, and the associated unreasonable risks from exposure to chrysotile asbestos identified in the risk evaluation, result from use of the articles. The articles themselves include sheet gaskets, other gaskets, brake blocks, brakes and linings, which wear down during use and release asbestos fibers. The risk evaluation determined that exposure to workers, ONUs, consumers and bystanders can occur when these items are replaced or repaired, resulting in harmful exposures. These identified risks from articles containing asbestos could result from exposure of any kind and, as a result, EPA had no feasible option to prevent these risks other than a complete prohibition. In particular, no other restriction EPA researched could sufficiently prevent unreasonable risk to ONUs, consumers, and bystanders who were not expected to wear respiratory protection. Accordingly, EPA's proposed regulatory action sets requirements for articles only to the extent necessary to address the identified risks from exposure to chrysotile asbestos from the article so that chrysotile asbestos does not present an unreasonable risk to health.

F. Reasonably Ascertainable Economic Consequences of the Rule

The reasonably ascertainable economic consequences of this rule include several components, all of which are described in the economic analysis for this proposed rule and summarized here (Ref. 2).

1. Likely effect of the rule on the national economy, small business, technological innovation, the environment, and public health.

With respect to the anticipated effects of this rule on the national economy, the economic impact of a regulation on the national economy generally only becomes measurable if the economic impact of the regulation reaches 0.25 percent to 0.5 percent of Gross Domestic Product (GDP). Given the current GDP of \$23.17 trillion, this is equivalent to a cost of \$58 billion to \$116 billion which is considerably higher than the estimated cost of this rule. EPA considered the number of businesses and workers that

would be affected and the costs and benefits to those businesses and workers and society at large and did not find that there would be a measurable effect on the national economy. In addition, EPA considered the employment impacts of this proposal. While EPA assumes that chlor-alkali plants currently using asbestos diaphragms will convert to non-asbestos technologies, some facilities may choose not to do so before the effective prohibition date in the proposed rule. As a result, the rule may result in plant closures and job losses, at least temporarily, at some chlor-alkali plants as well as at facilities that use chlorine, caustic soda, or their derivatives as intermediates. There may be similar employment effects at chemical plants using asbestos gaskets. However, there may also be increased temporary employment associated with new construction as firms convert their facilities to replace asbestos diaphragms and asbestos gaskets with substitute technologies. There may also be increases in employment at facilities that currently use asbestos-free technologies (Ref. 2).

EPA has determined that the rule will not have a significant impact on a substantial number of small entities; EPA estimates that the rule would affect at least 15 small entities, of which 12 are businesses supplying aftermarket brakes incurring costs between \$778 and \$11,523 per firm (depending on the number of brake replacements they perform). Nine of the brake replacement firms have a cost impact of less than 1% of the annual revenue. Of the three small entities estimated to be affected by the rule that are not supplying aftermarket brakes, two manufacture sheet gaskets for chemical production and one imports oilfield brake blocks. EPA did not have the information necessary to estimate the cost impacts on the other three small entities (Ref. 2).

The uses of asbestos subject to the rule are all in mature industries and the amount of asbestos consumed in them has been declining for some time. There is no evidence of innovative applications of asbestos in these uses in recent years, nor is there any expectation that such innovations would occur in the future in the absence of a prohibition on these uses of asbestos.

The effects of this rule on public health are estimated to be positive, due to the avoided incidence of adverse health effects attributable to asbestos exposure, including lung cancer, mesothelioma, and cancers of the larynx and ovary (Ref. 2). Despite the uncertainties about possible greater use and release of PFAS discussed in Unit III.B.4.a, EPA believes the benefits of removing chrysotile asbestos, a known human carcinogen that causes an aggressive and deadly cancer (mesothelioma), from continued use in the United States, are significant enough to outweigh the potential additional exposure to PFAS that might result from this action.

Converting chlor-alkali diaphragm cells to membrane cells reduces electricity consumption and thus the level of air pollution associated with electric power generation. This reduction in air pollution would provide environmental benefits as well as health benefits (Ref. 2).

2. Costs and benefits of the proposed regulatory action and of the primary alternative regulatory actions considered by the Administrator.

a. Proposed regulatory action:

EPA was able to quantify the costs of the proposed regulatory action to the chlor-alkali industry and the aftermarket automotive brake industry. For the chlor-alkali industry, the proposed rule is predicted to require an investment of approximately \$1.8 billion to convert the remaining plants with asbestos diaphragm cells to membrane cell technology. That conversion would result in significant energy savings that would accrue over the long run. EPA anticipates that most of these conversions would occur in the baseline in the coming decades even without the proposed rule, following existing trends in

the chlor-alkali industry to transition away from asbestos. When taking the capital costs and energy savings into account over a 20-year period, the proposed rule is estimated to result in incremental annualized net costs to the chlor-alkali industry of \$49 million per year using a 3 percent discount rate and \$87 million per year using a 7 percent discount rate. Membrane cells also produce a higher grade of caustic soda that has historically commanded a higher price than the product from diaphragm cells. If this price differential continues, converting to membrane cells could generate incremental net annualized savings of approximately \$35 million per year using a 3% discount rate and about \$40,000 per year using a 7% discount rate, when considered over a 20-year period.

The extent to which the higher grade of caustic soda will continue to command a higher relative price when produced in larger quantities depends on the elasticity of demand for the higher-grade product. EPA lacks sufficient information to characterize the demand curve for chlor-alkali products, including higher grade caustic soda. If the caustic soda price differential declines but is still greater than zero, then the incremental annualized net costs to the chlor-alkali industry will fall between these estimates. The proposed rule would result in total annualized costs for aftermarket automotive brakes estimated at approximately \$25,000 per year using a 3% discount rate and \$18,000 per year using a 7% discount rate.

EPA was unable to estimate the costs of prohibiting the commercial use of asbestos for other products that are subject to the rule (sheet gaskets used in chemical production, oilfield brake blocks, other vehicle friction products, or other gaskets). EPA requests comment on the costs of the rule for each of these use categories.

If there is no revenue gain from the higher grade of caustic soda produced, the combined quantified annualized costs of the rule for the chlor-alkali and aftermarket automotive brake industries would be approximately \$49 million per year and \$87 million per year using a 3 percent and 7 percent discount rate, respectively. If there is a revenue gain from caustic soda, the net quantified savings could be approximately \$35 million per year and \$27,000 per year using a 3 percent and 7 percent discount rate, respectively. Because the costs of prohibiting the commercial use of asbestos in sheet gaskets, oilfield brake blocks, other friction products, and other gaskets could not be quantified, these combined values are an upper bound estimate of total cost savings and a lower bound estimate of total costs (Ref. 2).

The combined national quantified benefits of avoided cancer cases are approximately \$3,000 per year using a 3% discount rate and \$1,200 per year using a 7% discount rate. These reflect the benefits related to the rule's requirements for chlor-alkali diaphragms, sheet gaskets for chemical production, and aftermarket brakes. EPA did not estimate total benefits of the requirements for oilfield brake blocks, other vehicle friction products or other gaskets because the Agency did not have sufficient information on the number of individuals likely to be affected by the rule.

In addition to the quantified benefits of avoided cancer cases associated with asbestos exposure, the proposed rule may generate significant benefits from reduced air pollution associated with electricity generation. Chlor-alkali production is one of the most energy-intensive industrial operations. According to the U.S. Department of Energy the industry consumed approximately 317 trillion Btu per year as of 2004, amounting to approximately 2% of the total electric power used in the United States (Ref. 21). Since membrane cells are more energy efficient than diaphragm cells, converting to membrane cells reduces electricity consumption and thus the level of pollutants associated with electric power generation, including carbon dioxide, particulate matter, sulfur dioxide, and nitrogen oxides.

There is uncertainty about the magnitude and location of these emission reductions. EPA's economic analysis used a simplifying assumption that the electric power used by chlor-alkali plants is all purchased from commercial electric generating units. EPA then used information on regional electricity markets to estimate how changes in electricity demand would affect emissions of greenhouse gases and criteria air pollutants. EPA performed this sensitivity screening-level analysis which found that converting asbestos diaphragm plants to membrane cells could yield tens of millions of dollars per year in environmental and health benefits from reduced emissions of particulate matter, sulfur dioxide, nitrogen oxides, and carbon dioxide (Ref. 2). Please see Chapter 4, Section 4.4 of the economic analysis for more discussion. EPA estimated the potential health and environmental benefits of reduced emissions of carbon dioxide using the federal government's interim estimates of the social cost of greenhouse gases. EPA does not rely on the interim estimates of the social cost of greenhouse gases as a record basis for this Agency action, and the Agency would propose the same conclusion regarding the requirements of this proposed rule even in the absence of the social cost of greenhouse gases.

b. Primary alternative regulatory action:

Under the primary alternative action, the capital investment needed to convert chlor-alkali plants to membrane cells would be spread out over five years instead of two, but the energy savings and any revenue gains from producing a higher grade of caustic soda would accrue more slowly as well. The total annualized costs to the chlor-alkali industry of the additional requirements for compliance with the ECEL as well as disposal, downstream notification, and recordkeeping requirements are estimated to be approximately \$103,000 per year using a 3% discount rate and \$127,000 per year using a 7% discount rate, assuming the industry relies solely on the use of upgraded PPE to comply with the ECEL. If there are no revenue gains from caustic soda, the total 20-year annualized incremental net costs of all the requirements for the chlor-alkali industry would be \$48 million per year and \$77 million per year using a 3% and 7% discount rate, respectively. If the higher grade of caustic soda generates increased revenues, the chlor-alkali industry could have an overall annualized incremental net savings over 20 years of \$27 million per year using a 3% discount rate; using a 7% discount rate, the industry is predicted to incur an annualized net cost of \$4 million per year.

The total annualized costs of the alternative option for aftermarket automotive brakes are estimated at approximately \$24,000 per year using a 3% discount rate and \$16,000 per year using a 7% discount rate, which are similar to the costs of the proposed option (\$25,000 per year using a 3% discount rate and \$18,000 using a 7% discount rate).

EPA was not able to estimate the costs of prohibiting the use of asbestos sheet gaskets for chemical production. The total annualized cost of the other requirements for this industry (ECEL, disposal, downstream notification, and recordkeeping requirements) is estimated to be approximately \$230,000 per year using a 3% discount rate and \$285,000 per year using a 7% discount rate (assuming that the industry relies solely on PPE to comply with the ECEL).

For the remaining use categories (oilfield brake blocks, other vehicle friction products, and other gaskets), EPA was unable to estimate the costs of prohibiting the manufacturing, processing, distribution or commercial use of asbestos, disposal, downstream notification, or recordkeeping requirements, as the Agency was unable to estimate the number of affected sites.

The combined quantified incremental annualized costs of the alternative option for the chlor-alkali, aftermarket automotive brake, and sheet gasket industries would be approximately \$48 million per year and \$78 million per year using a 3% and 7% discount rate, respectively, if there is no revenue gain from the higher grade of caustic soda produced. If there is a revenue gain from producing a higher grade of caustic soda, the alternative option could result in combined quantified savings of approximately \$26 million per year using a 3% discount rate but combined quantified costs of approximately \$4 million per year using a 7% discount rate. Because the costs of prohibiting the use of asbestos in sheet gaskets could not be calculated, nor any of the costs for oilfield brake blocks, other friction products, and other gaskets, these combined values are an upper bound estimate of total savings and a lower bound estimate of total costs.

The combined national quantified benefits of avoided cancer cases under the alternative option are approximately \$2,900 per year using a 3% discount rate and \$1,100 per year using a 7% discount rate. These reflect the benefits related to the rule's requirements for chlor-alkali diaphragms, sheet gaskets for chemical production, and aftermarket brakes. EPA did not estimate total benefits of the requirements for oilfield brake blocks, other vehicle friction products or other gaskets because the Agency did not have sufficient information on the number of individuals likely to be affected by the rule. As is the case with the proposed option, converting asbestos diaphragm plants to membrane cells could yield tens of millions of dollars per year in environmental and health benefits from reduced criteria air pollution and CO₂ emissions due to decreased electricity consumption and production (Ref. 2).

3. Cost effectiveness of the proposed regulatory action and primary alternative regulatory actions considered by the Administrator.

For the COUs where EPA determined that chrysotile asbestos presents an unreasonable risk of injury to health or the environment, both the proposed option and the alternative option reduce unreasonable risks to the extent necessary such that risk is no longer presented. In achieving this result, however, the estimated costs of the proposed option and the alternative option differ as described in Unit V.F. The costs of achieving the desired outcome via the proposed option or the alternative option can be compared to evaluate cost-effectiveness. The cost-effectiveness of the options depends on whether and to what extent the higher grade of caustic soda produced by membrane cells generates increased revenues for chlor-alkali manufacturers. If the revenues from caustic soda do increase, the proposed option results in estimated annualized cost savings of about \$35 million per year using a 3% discount rate or about \$27,000 using a 7% rate. The alternative option is estimated to result in annualized savings of about \$26 million per year using a 3% discount rate or annualized costs of about \$4 million per year using a 7% rate. In this revenue increasing scenario the proposed option will be more cost effective in addressing the unreasonable risk. If there is no increase in revenues, the estimated annualized costs of the proposed rule are about \$49 million per year using a 3% discount rate or about \$87 million per year using a 7% rate. The estimated annualized costs of the alternative option are about \$48 million per year using a 3% discount rate or about \$78 million per year using a 7% rate. In this revenue neutral scenario the alternative option will be more cost effective in addressing the unreasonable risk. In the latter scenario, the difference in annualized costs between the options is largely due to the differences in their effective dates. This is because costs that occur farther in the future have smaller net present values and annualized values than the same costs that occur sooner. The dates when the manufacture (including import), processing, distribution in commerce and

commercial use of chrysotile asbestos are prohibited occur later under the alternative option than under the proposed option. The differences in the annualized costs are mainly due to discounting and are not driven by differences in the estimated unit costs of compliance between the two options.

4. Request for comment on economic analysis.

EPA's economic analysis used a simplifying assumption that the electric power used by chlor-alkali plants is all purchased from commercial electric generating units. EPA then used information on regional electricity markets to estimate how changes in electricity demand would affect emissions of greenhouse gases and criteria air pollutants. EPA requests comment on this assumption and approach to estimating emissions reductions. EPA further requests information on how much of the electric power for the chlor-alkali plants affected by this rule is purchased from commercial electric generating units and where these units are located; how much power is provided by on-site co-generation units; what fuels are used by both types of power sources; and how the mix of electricity sources and fuel types would be affected by a conversion to membrane cells or non-asbestos diaphragms. EPA also requests comment on the extent to which the power produced by these co-generation units is sold or exported, as well as the extent to which the electricity or heat produced is used on-site to produce goods other than chlorine or caustic soda (*e.g.*, ethylene dichloride, vinyl chloride monomer, chlorinated organics, etc.).

The chlor-alkali production occurs in three steps: Pre-electrolysis brine preparation, electrolysis, and post-electrolysis after-treatment of the chlorine and caustic soda. EPA estimated the net cost of converting from asbestos diaphragms to membranes or non-asbestos diaphragms based on the capital costs of the conversion, the electricity savings of the electrolysis step, and the potential for increased revenue from a higher grade of caustic soda. EPA requests comment on the methodology and data it used to estimate these values.

EPA estimated the cost to convert asbestos diaphragm cell chlor-alkali capacity to membrane technology based on the average cost per ton from two different studies, a 2001 paper by Stanley and a 2014 study by the European Commission. EPA requests comment on reasons why using the information from one or the other study might predict the costs of this rule more accurately than using the average of the two. EPA requests that commenters identify whether there are more recent published studies that would be appropriate for estimating the conversion costs from asbestos diaphragms to non-asbestos diaphragms or membrane cells. EPA also requests data on other capital costs or savings associated with the conversion (*e.g.*, the avoidance of refurbishment costs for existing asbestos diaphragm cells).

Brine preparation and the treatment of the chlorine and caustic soda require electricity, steam, and chemical inputs. The different production technologies can require different amounts of these inputs at various steps in the production process. EPA requests data on the positive and negative differences in operating costs per unit of output and energy use per unit of output between asbestos diaphragms, membranes, and non-asbestos diaphragms, specific to each of the various input processing, electrolysis, and output processing steps.

EPA estimated the energy savings and potential revenue gains of the rule for the chlor-alkali industry based on a capacity utilization rate of 88%, which reflects a typical operating rate for the industry in recent years. EPA requests comment on whether an alternative value would better represent a typical operating rate over the twenty-year analytical timeframe used in EPA's analysis.

EPA requests information relevant to determining whether increased costs for chlorine and caustic soda that may result from the rule would lead to disproportionate or adverse effects on water systems that serve populations with a higher concentration of people of color or lower incomes than the total U.S. population.

EPA requests comment on its analyses of the number of affected firms for the sheet gasket for chemical production, oilfield brake block, aftermarket automotive brake, other gasket, and other vehicle friction use categories and the costs they would incur as a result of the proposed rule, as well as information that the Agency could use to improve these estimates.

VI. TSCA Section 9 Analysis and Section 26(h) Considerations

A. TSCA Section 9(a) Analysis

Section 9(a) of TSCA provides that, if the Administrator determines in the Administrator's discretion that an unreasonable risk may be prevented or reduced to a sufficient extent by an action taken under a Federal law not administered by EPA, the Administrator must submit a report to the agency administering that other law that describes the risk and the activities that present such risk. Section 9(a) describes additional procedures and requirements to be followed by EPA and the other federal agency after submission of the report. As discussed in this Unit, the Administrator does not determine that unreasonable risk from the conditions of use of chrysotile asbestos may be prevented or reduced to a sufficient extent by an action taken under a Federal law not administered by EPA.

TSCA section 9(d) instructs the Administrator to consult and coordinate TSCA activities with other Federal agencies for the purpose of achieving the maximum enforcement of TSCA while imposing the least burden of duplicative requirements. For this proposed rule, EPA has consulted with other appropriate Federal executive departments and agencies including OSHA and NIOSH.

OSHA requires that employers provide safe and healthful working conditions by setting and enforcing standards and by providing training, outreach, education and assistance. OSHA has three separate health standards for asbestos covering employers in General Industry (29 CFR 1910.1001); Shipyards (29 CFR 1915.1001); and Construction (29 CFR 1926.1101). These standards include a permissible exposure limit (PEL) for asbestos of 0.1 fibers per cubic centimeter (cc) of air as an eight-hour time weighted average (TWA), and an excursion limit of 1.0 asbestos fibers per cubic centimeter over a 30-minute period. The standards apply to all occupational exposures to asbestos and require exposure monitoring to determine employee exposure. Exposure monitoring includes both initial monitoring of employees who are, or may reasonably be expected to be, exposed to airborne concentrations at or above the TWA PEL or excursion limit, as well as additional monitoring. Monitoring frequency depends on work classification exposure while additional monitoring may be required based on changes in the workplace environment that may result in new or additional exposures above the TWA PEL or excursion limit.

This proposed rule addresses risk from exposure to chrysotile asbestos in both workplace and consumer settings (*e.g.*, do-it-yourself automobile maintenance). With the exception of TSCA, there is no Federal law that provides authority to prevent or sufficiently reduce these cross-cutting exposures. No other Federal regulatory agency can evaluate and address the totality of the risk that EPA is addressing in this proposal. For example, OSHA may set exposure limits for workers but its authority is limited to the workplace and does not extend to consumer uses of hazardous chemicals (while EPA does not regulate consumer use directly under TSCA 6(a)(5), it has authority to regulate the upstream

supply of chemicals for consumer uses). Further, OSHA does not have direct authority over state and local employees, and it has no authority at all over the working conditions of state and local employees in states that have no OSHA-approved State Plan under 29 U.S.C. 667. CPSC is charged with protecting the public from unreasonable risks of injury or death associated with the use of the thousands of types of consumer products under the agency's jurisdiction, CPSC has the authority to regulate chrysotile asbestos in such consumer products, but not in automobiles, trucks and motorcycles, which are not under its jurisdiction.

Moreover, the 2016 amendments to TSCA, Public Law 114-182, alter both the manner of identifying unreasonable risk under TSCA and EPA's authority to address unreasonable risk under TSCA, such that risk management under TSCA is increasingly distinct from analogous provisions of the Consumer Product Safety Act (CPSA), the Federal Hazardous Substances Act (FHSA), or the OSH Act. These changes to TSCA reduce the likelihood that an action under the CPSA, FHSA, or the OSH Act would sufficiently prevent or reduce the unreasonable risk of chrysotile asbestos. In a TSCA section 6 rule, following an unreasonable risk determination, EPA must apply risk management requirements to the extent necessary so that the chemical no longer presents unreasonable risk and only consider costs to the extent practicable, 15 U.S.C. 2605(a), (c)(2), subject to time-limited conditional exemptions, 15 U.S.C. 2605(g). By contrast, a consumer product safety rule under the CPSA must include a finding that "the benefits expected from the rule bear a reasonable relationship to its costs." 15 U.S.C. 2058(f)(3)(E). Additionally, the 2016 amendments to TSCA reflect Congressional intent to "delete the paralyzing 'least burdensome' requirement," 162 Cong. Rec. S3517 (June 7, 2016), a reference to TSCA section 6(a) as originally enacted, which required EPA to use "the least burdensome requirements" that protect "adequately" against unreasonable risk, 15 U.S.C. 2605(a) (1976). However, a consumer product safety rule under the CPSA must impose "the least burdensome requirement which prevents or adequately reduces the risk of injury for which the rule is being promulgated." 15 U.S.C. 2058(f)(3)(F). Analogous requirements, also at variance with recent revisions to TSCA, affect the availability of action CPSC may take under the FHSA relative to action EPA may take under TSCA. 15 U.S.C. 1262. Gaps also exist between OSHA's authority to set workplace standards under the OSH Act and EPA's obligations to sufficiently address chemical risks under TSCA. To set PELs for chemical exposure, OSHA must first establish that the new standards are economically feasible and technologically feasible. 79 FR 61387 (2014). But under TSCA, EPA's substantive burden under TSCA section 6(a) is to demonstrate that, as regulated, the chemical substance no longer presents an unreasonable risk, with unreasonable risk being determined under TSCA section 6(b)(4).

EPA therefore concludes that: TSCA is the only regulatory authority able to prevent or reduce risks of chrysotile asbestos to a sufficient extent across the range of conditions of use, exposures and populations of concern; these risks can be addressed in a more coordinated, efficient and effective manner under TSCA than under different laws implemented by different agencies, and there are key differences between the finding requirements of TSCA and those of the OSH Act. For these reasons, in the Administrator's discretion, the Administrator does not determine that unreasonable risk from the conditions of use of chrysotile asbestos may be prevented or reduced to a sufficient extent by an action taken under a Federal law not administered by EPA.

B. TSCA Section 9(b) Analysis

If EPA determines that actions under other Federal laws administered in whole or in part by EPA could eliminate or sufficiently reduce a risk to health or the environment, section 9(b) of TSCA instructs EPA to use these other authorities unless the Administrator determines in the Administrator's discretion

that it is in the public interest to protect against such risk under TSCA. In making such a public interest finding, TSCA section 9(b)(2) states: “the Administrator shall consider, based on information reasonably available to the Administrator, all relevant aspects of the risk . . . and a comparison of the estimated costs and efficiencies of the action to be taken under this title and an action to be taken under such other law to protect against such risk.”

Although several EPA statutes have been used to limit chrysotile asbestos exposure (Unit II.B.1), regulations under those EPA statutes have limitations because they largely regulate releases to the environment, rather than direct human exposure. CAA generally focuses on releases of asbestos to the ambient air. Under RCRA Subtitle D, the disposal of chrysotile asbestos is regulated as a non-hazardous solid waste; RCRA does not address exposures during manufacturing, processing, distribution and use of products containing chrysotile asbestos. Only TSCA provides EPA the authority to regulate the manufacture (including import), processing, distribution in commerce, commercial use and commercial disposal of chemicals substances to be able to address chrysotile asbestos direct exposure to humans.

For these reasons, the Administrator does not determine that unreasonable risk from the conditions of use of chrysotile asbestos could be eliminated or reduced to a sufficient extent by actions taken under other Federal laws administered in whole or in part by EPA.

C. TSCA Section 26(h) Considerations

In accordance with TSCA section 26(h), EPA has used scientific information, technical procedures, measures, methods, protocols, methodologies, and models consistent with the best available science. The unreasonable risk determination was based on a risk evaluation, which was subject to peer review and public comment, was developed in a manner consistent with the best available science and based on the weight of the scientific evidence as required by TSCA sections 26(h) and 40 CFR 702.43 and 702.45. The extent to which the various information, procedures, measures, methods, protocols, methodologies or models, as applicable, used in EPA's decision have been subject to independent verification or peer review is adequate to justify their use, collectively, in the record for this rule. Additional information on the peer review and public comment process, such as the peer review plan, the peer review report, and the Agency's response to comments, can be found at EPA's risk evaluation docket at EPA-HQ-OPPT-2019-0501 (Ref. 23).

VII. 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 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 the technical person listed under FOR FURTHER INFORMATION CONTACT .

1. EPA. Risk Evaluation for Asbestos Part 1: Chrysotile Asbestos. December 2020. (EPA-HQ-OPPT-2019-0501-0117).
2. EPA. Economic Analysis of the TSCA Section 6 Proposed Rule for Asbestos Risk Management, Part 1. April 2022.

3. U.S. Geological Survey. (2021). Mineral commodity summaries 2021: U.S. Geological Survey, <https://doi.org/10.3133/mcs2021>.
4. Environment and Climate Change Canada. (2021). Prohibitions of Asbestos and Products Containing Asbestos Regulations (*SOR/2019-196*). <https://pollution-waste.canada.ca/environmental-protection-registry/regulations/view?Id=150>. Accessed August 31, 2021.
5. Department of Labor, Occupational Safety and Health Administration. Permissible Exposure Limits –Annotated Tables. www.osha.gov/annotated-pels. Accessed August 31, 2021.
6. EPA. Problem Formulation for the Risk Evaluation of Asbestos. May 2018. (EPA-HQ-OPPT-2016-0736-0131). <https://www.regulations.gov/document/EPA-HQ-OPPT-2016-0736-0131>.
7. EPA. Section 6(a) Rulemakings under the Toxic Substances Control Act (TSCA) Chrysotile Asbestos Rulemakings E.O. 13132: Federalism Consultation. May 13, 2021.
8. EPA. Notification of Consultation and Coordination on Proposed Rulemakings under the Toxic Substances Control Act for Asbestos Part 1: Chrysotile Asbestos. May 24, and June 3, 2021. Tribal Consultation.
9. Asbestos Disease Awareness Organization. Comments submitted at the Environmental Justice Webinar. June 1, 2021.
10. EPA. Part 1. Asbestos (Chrysotile) Public Webinar Slides. February 3, 2021.
11. EPA. Meeting with Environment and Climate Change Canada on Risk Management under TSCA section 6, Asbestos Part 1: Chrysotile Asbestos. February 26, 2021.
12. EPA. Email Exchange with Mobis and EPA on the presence of Asbestos in its Brake and Friction Products. March to June, 2021.
13. EPA. Existing Chemical Exposure Limit (ECEL) for Occupational Use of Chrysotile Asbestos. March 2, 2021.
14. EPA. Meeting with Chemours Corporation on Risk Management under TSCA section 6, Asbestos Part 1: Chrysotile Asbestos. March 29, 2021.
15. EPA. Meeting with Olin Corporation on Risk Management under TSCA section 6, Asbestos Part 1: Chrysotile Asbestos. June 2, 2021.
16. EPA. Meeting with Oxychem Corporation on Risk Management under TSCA section 6, Asbestos Part 1: Chrysotile Asbestos. May 27, 2021.
17. EPA. Meeting with Westlake Corporation on Risk Management under TSCA section 6, Asbestos Part 1: Chrysotile Asbestos. May 20, 2021.
18. Westlake Corporation. Comments submitted to EPA on Axial/Westlake use of asbestos for diaphragms in chlor-alkali facility. May 22, 2018.

19. Asbestos Disease Awareness Organization. (2019). ADAO Chlor-Alkali Industry Report. <https://www.asbestosdiseaseawareness.org/wp-content/uploads/2019/08/ADAO-ChlorAlkali-Industry-Report.pdf>. Accessed on June 1, 2021.
20. EPA. Meeting and Correspondence with The Chlorine Institute on Risk Evaluation and Risk Management for Part 1: Chrysotile Asbestos. June 30, 2021.
21. EPA. Email Correspondence with Oilfield Industry concerning use of Chrysotile Asbestos in Brake Blocks. April through June, 2021.
22. U.S. Department of Energy Efficiency and Renewable Energy, Industrial Technologies Program. (2006). Zero-Gap Membrane Chlor-Alkali Cells with Oxygen-Depolarized Cathodes Achieved Energy Savings of 32%. https://www1.eere.energy.gov/manufacturing/industries_technologies/imf/pdfs/1797_advanced_chlor-alkali.pdf. Accessed on November 1, 2021.
23. EPA. Summary of External Peer Review and Public Comments and Disposition for Chrysotile Asbestos. May, 2020 (EPA-HQ-OPPT-2019-0501).
24. EPA. Information Collection Request (ICR) for the Regulation of Part 1: Chrysotile Asbestos under TSCA Section 6(a) (Proposed Rule). EPA ICR No. 2707.01 and OMB No. 2070-[NEW].
25. EPA. Environmental Justice Consultation on Forthcoming Proposed Rulemakings under TSCA Section 6(a). May 12, 2021. <https://www.epa.gov/chemicals-under-tsca/epa-announces-environmental-justice-consultations-risk-management-o>.
26. Office of Management and Budget. Memorandum for the Heads of Executive Departments and Agencies (M-95-09). Guidance for Implementing Title II of S. 1. March 31, 1995. <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/1995-1998/m95-09.pdf>. Accessed December 14, 2021.
27. National Institute for Occupational Safety and Health. Hierarchy of Controls. <https://www.cdc.gov/niosh/topics/hierarchy/default.html>. Accessed December 10, 2021.

VIII. Statutory and Executive Order Reviews

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

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is an economically significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review under Executive Order 12866 (58 FR 51735, October 4, 1993) and Executive Order 13563 (76 FR 3821, January 21, 2011). Any changes made in response to OMB recommendations have been documented in the docket. EPA prepared an economic analysis of the potential costs and benefits associated with this action, which is available in the docket and summarized in Unit IV.D (Ref. 2).

B. Paperwork Reduction Act (PRA)

The information collection requirements in this proposed rule have been submitted to OMB for review and comment under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by the EPA has been assigned the EPA ICR number 2707.01 (Ref. 24), and it is briefly summarized here.

The information collection activities required under the proposed rule include recordkeeping requirements. The proposed rule does not include any reporting requirements or any third-party notification requirements, nor does it include any certification requirements that would substitute for a collection of information to collect evidence of, or to monitor, compliance with regulatory standards. As explained in Unit IV.A.4.b and specified at proposed section 751.X11, companies that manufacture (including import), process, distribute in commerce and use chrysotile asbestos would be required to retain certain information at the company headquarters for five years from the date of generation. These information collection activities are necessary to provide EPA with information upon inspection. EPA believes that these information collection activities would not significantly impact the regulated entities. As further explained in the ICR document:

- Four chemical manufacturers that use sheet gaskets and 12 companies installing aftermarket automotive brakes are estimated to incur additional recordkeeping costs associated with their disposal activities. Each firm is predicted to incur a burden of approximately 4.4 hours. The aftermarket automotive brake installers incur this burden for one year, and the chemical manufacturers using sheet gaskets incur it for two years.
- For the remaining industry sectors and recordkeeping activities required by the rule, records that comply with the requirements are assumed to already be maintained as part of ordinary business records. Therefore, EPA estimates that such respondents would incur no additional incremental paperwork burdens due to the rule.

Respondents/affected entities: Chrysotile asbestos manufacturers (including importers), processors, and distributors.

Respondent's obligation to respond: Mandatory.

Estimated number of respondents: 16.

Frequency of response: On occasion.

Total estimated burden: 29 hours per year. Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: \$1,166 per year.

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden to EPA using the docket identified at the beginning of this proposed rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs using the interface at www.reginfo.gov/public/do/PRAMain. Find this particular information collection by selecting "Currently under Review—Open for Public Comments" or by using the search function. Since OMB is

required to make a decision concerning the ICR between 30 and 60 days after receipt, OMB must receive comments no later than May 12, 2022. EPA will respond to any ICR-related comments in the 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 manufacture (including import), process, distribute in commerce and use chrysotile asbestos in the conditions of use covered by this proposed rule. EPA estimates that the proposed rule would affect at least 15 small entities, of which 12 are businesses supplying aftermarket brakes incurring costs between \$778 and \$11,523 per firm (depending on the number of brake replacements they perform). Nine of the brake replacement firms have a cost impact of less than 1% of their annual revenue. Of the three small entities estimated to be affected by the rule that are not supplying aftermarket brakes, two manufacture sheet gaskets for chemical production and one imports oilfield brake blocks. EPA did not have the information necessary to estimate the cost impacts on the other three small entities. The available information about the magnitude of the small entity impacts for each use category are summarized below:

Chlor-alkali plants: None of the three affected firms are small businesses.

Sheet gasket manufacturing for chemical production: EPA does not have the information to calculate the costs of the rule to small businesses in this sector, so small business impacts have not been estimated. EPA requests comment on the costs of the rule to firms currently manufacturing asbestos sheet gaskets for chemical production.

EPA is aware of one small business that manufactures sheet gaskets containing asbestos for chemical production, and the Agency assumes that there may be a second small business engaged in this activity. While EPA lacks the information to estimate the compliance cost and the resulting impact on firms in this sector, the one firm EPA is aware of sells a diverse line of products (including non-asbestos gaskets and many products other than gaskets) serving several different industries, and it operates several sites that do not manufacture gaskets containing asbestos. This suggests that asbestos-containing gaskets are not a primary source of revenue for the firm. EPA assumes that if there is another manufacturer of asbestos gaskets, that it also sells non-asbestos gaskets. Since asbestos gaskets are such a niche portion of the gasket industry, EPA believes this is a reasonable assumption. If the customers using gaskets containing asbestos are able to convert entirely to asbestos-free gaskets, the affected gasket manufacturers could likely provide the substitute products. These customers consist of chemical manufacturers that are all large businesses as far as EPA is aware. To the extent that asbestos-free gaskets do not last as long as those containing asbestos, the proposed rule could increase revenues for the affected gasket manufacturers. A less durable product might be less profitable for the customers, but selling a product that has to be replaced more often could increase revenues for the suppliers.

Sheet gasket end users (chemical production): None of the 4 firms known to be affected are small businesses. It is possible there may be other unknown small businesses that may be affected.

Oilfield brake block importer: EPA does not have the information to calculate the costs of the rule to small businesses in this sector, so small business impacts have not been estimated. EPA requests comment on the costs of the rule to firms supplying oilfield brake blocks.

There is one firm known to import and distribute oilfield brake blocks containing asbestos and it is a small business. While EPA was not able to estimate the compliance cost and its impact on this firm, if the customers (which may include other small businesses) with older drilling rigs currently using brake blocks containing asbestos continue to use those rigs, the importer could likely provide the asbestos-free brake blocks used as substitutes. To the extent that asbestos-free brake blocks are more expensive and do not last as long as those containing asbestos, the proposed rule could increase revenues for the affected brake block importer. A less durable product might be less profitable for the customers, but selling a product that has to be replaced more often could increase revenues for the importer.

Oilfield brake block—end users: EPA has not identified any small businesses using oilfield brake blocks containing asbestos. If there are such small businesses, EPA does not have the information needed to calculate the costs of the rule to them. EPA requests comment on whether there are small businesses using oilfield brake blocks containing asbestos, and if so, what the costs of the rule to them would be. Industry sources have indicated that the use of asbestos-containing brake blocks has declined over time because the type of drilling rigs that use them have been replaced by equipment that does not require the use of brake blocks containing asbestos, or that do not use brake blocks at all. Since there is only one known importer and it is small, there are likely few companies still using asbestos-containing brake blocks.

Aftermarket automotive brakes: Twelve firms are estimated to be affected by the proposed rule, and all of them are assumed to be small businesses. As described in the Economic Analysis (Ref. 2), brakes containing asbestos are estimated to have a very small share (0.002%) of the total market, and the cost impact of the rule is modest (estimated to range between \$800 and \$12,000 per establishment based on an incremental cost of \$4 per brake and annual recordkeeping costs of approximately \$178). It is expected that the affected firms would pass the higher cost of non-asbestos brakes on to their customers, who may include other small businesses. EPA did not estimate any costs for these businesses associated with finding suppliers of non-asbestos brakes because EPA assumes that these businesses already sell non-asbestos brakes as well as brakes containing asbestos.

Other gaskets: EPA is not aware if any firms that would be affected for this use category, since the one firm that previously indicated that it used these products subsequently stated that it does not do so. Therefore, no impacts are predicted on this use category as a result of the rule.

Other vehicle friction products: EPA is not aware of any firms impacted for this use category because the one firm that previously indicated to EPA that it used products in this use category subsequently stated that it does not do so. Therefore, no impacts are predicted on this use category as a result of the rule. To the extent there are ongoing uses, it is likely that the effects of the rule would be similar to those for aftermarket auto brakes (a few firms facing a small cost-increase for asbestos-free products that probably can be passed on to consumers).

Details of this analysis are presented in the Economic Analysis (Ref. 2).

EPA requests public comments regarding on the number of small businesses subject to the rule, including use categories for which EPA did not identify any affected small businesses, and on the potential impacts of the rule on these small businesses.

D. Unfunded Mandates Reform Act (UMRA)

This action contains a federal mandate under UMRA, 2 U.S.C. 1531-1538, that may result in expenditures of \$100 million or more for state, local and tribal governments, in the aggregate, or the private sector in any one year. Accordingly, the EPA has prepared a written statement required under section 202 of UMRA. The statement is included in the docket for this action and briefly summarized here.

Total estimated compliance costs of the proposed rule are estimated to be approximately \$909 million per year the first two years, not including costs for sheet gaskets used in chemical production, brake blocks in the oil industry, other vehicle friction products, or other gaskets. Thus, the cost of the rule to the private sector exceeds the inflation-adjusted UMRA threshold of \$100 million in any one year. When longer term savings in the chlor-alkali industry are accounted for over a 20-year period, the quantified effects of the proposed rule range from an incremental cost of \$49 million per year to an incremental savings of \$35 million per year using a 3% discount rate. Using a 7% discount rate, the incremental effects range from a cost of 90 million per year to savings of \$300,000 per year.

Most of the estimated compliance costs would be incurred by the chlor-alkali industry. Of the nine chlor-alkali plants affected by the rule, seven are in Louisiana or Texas.

The economic impact of a regulation on the national economy is generally considered to be measurable only if the economic impact of the regulation reaches 0.25 percent to 0.5 percent of Gross Domestic Product (GDP) (Ref. 26). Given the current GDP of \$23.17 trillion, this is equivalent to a cost of \$58 billion to \$116 billion. Therefore, EPA has concluded that this rule is highly unlikely to have any measurable effect on the national economy.

The quantified benefits of avoided cancer incidence due to the requirements for chlor-alkali plants, sheet gaskets in chemical production, and aftermarket automobile brakes total approximately \$3,000 per year using a 3% discount rate and \$1,200 per year using a 7% discount rate. There may be additional unquantified benefits from reducing exposures associated with other uses of chrysotile asbestos, and avoided cases of non-cancer health outcomes. There may also be significant benefits due to the reduction in pollutants generated by electric utilities that supply power to the chlor-alkali plants.

Additional information on EPA's estimates of the benefits and costs of this action are provided in Units I.E and V.F and in the Economic Analysis for this action (Ref. 2). Information on the authorizing legislation is provided in Unit I.B. Information on prior consultations with affected State, local, and Tribal governments is provided in Units VIII.E and VIII.F.

This action is not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

The EPA has concluded that this action has federalism implications, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999), because regulation under TSCA section 6(a) may preempt state law. EPA provides the following preliminary federalism summary impact statement. The Agency consulted with state and local officials early in the process of developing the proposed action to facilitate their meaningful and timely input into its development. EPA invited the following national organizations representing state and local elected officials to a meeting on May 13, 2021, in Washington, DC: National Governors Association; National Conference of State Legislatures, Council of State Governments, National League of Cities, U.S. Conference of Mayors, National Association of

Counties, International City/County Management Association, National Association of Towns and Townships, County Executives of America, and Environmental Council of States. A summary of the meeting with these organizations, including the views that they expressed, is available in the docket (Ref. 7). EPA provided an opportunity for these organizations to provide follow-up comments in writing but did not receive any such comments.

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). This rulemaking would not have substantial direct effects on tribal government because chrysotile asbestos is not manufactured, processed, or distributed in commerce by tribes and would not impose substantial direct compliance costs on tribal governments. Thus, E.O. 13175 does not apply to this action. EPA nevertheless consulted with tribal officials during the development of this action, consistent with the EPA Policy on Consultation and Coordination with Indian Tribes.

EPA met with tribal officials via teleconferences on May 24, 2021, and June 3, 2021, concerning the prospective regulation of chrysotile asbestos under TSCA section 6 (Ref. 8). Tribal officials were given the opportunity to meaningfully interact with EPA risk managers concerning the current status of risk management. EPA received questions during both meetings held during the consultation period concerning potential risks to workers, consumers, and general population. Participants in the consultations expressed interest in the conditions of use where EPA found unreasonable risk and how EPA would address that unreasonable risk. EPA responded by providing the suite of options provided the agency under TSCA section 6 to address the unreasonable risk (Ref. 8).

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

This action is subject to Executive Order 13045 because it is an economically significant regulatory action as defined by Executive Order 12866, and the EPA believes that the environmental health or safety risk addressed by this action has a disproportionate effect on children. The health effect of concern related to exposures to chrysotile asbestos are mesothelioma and lung cancer, both of which have a long latency periods following exposure. The risk evaluation demonstrated in sensitivity analyses that age at first exposure affected risk estimates, with earlier exposures in life resulting in greater risk. For children, exposures can be anticipated (1) as bystanders for consumer uses such as aftermarket brakes and (2) in consumer uses and occupational uses given that the risk evaluation presented information indicating that children 16 years of age may engage in these activities. The results of this evaluation are discussed in Units II.A. and V.A.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution in Commerce, or Use

This action is not a “significant energy action” under 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 and has not otherwise been designated by the Administrator of OMB's Office of Information and Regulatory Affairs as a “significant energy action.” The action is predicted to reduce energy use and is not expected to reduce energy supply or increase energy prices.

I. National Technology Transfer and Advancement Act (NTTAA)

This proposed rulemaking does not involve technical standards. As such, NTTAA section 12(d), 15 U.S.C. 272 note, does not apply to this action.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

This action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). Executive Order 12898 establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the U.S. This rule would increase the level of environmental protection for all affected populations without having any disproportionately high and adverse health or environmental effects on any population, including any minority, or low-income population. EPA also conducted outreach to advocates of communities that might be subject to disproportionate exposure to chrysotile asbestos, such as minority populations, low-income populations and indigenous peoples. EPA's EJ consultation occurred from June 1 through August 13, 2021. On June 1 and 9, 2021, EPA held public meetings as part of this consultation (Ref. 24). See also Unit III.A.1. These meetings were held pursuant to and in compliance with Executive Order 12898 and Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad* (86 FR 7619, February 1, 2021). EPA received several comments following the EJ meetings. Commenters expressed concerns that consumers who live near chlor-alkali facilities and Do-It-Yourself (DIY) auto workers could be exposed unless chrysotile asbestos is banned (Ref. 9). EPA also acknowledges that there are pre-existing environmental justice concerns in communities surrounding some of the affected chlor-alkali facilities and one other chemical manufacturer in Louisiana and Texas due high levels of polluting industrial activities and high proportions of minority residents. This rule is not expected to affect these pre-existing environmental justice concerns.

List of Subjects in 40 CFR Part 751

Environmental protection, Chemicals, Export certification, Hazardous substances, Import certification, Recordkeeping.

Michael S. Regan,

Administrator.

Therefore, for the reasons stated in the preamble, EPA proposes to amend 40 CFR part 751 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. Add subpart F to read as follows:

Subpart F Chrysotile Asbestos

Sec.

751.X01

General.

751.X03

Definitions.

751.X05

Restrictions on Conditions of Use.

751.X07

[Reserved]

751.X09

Disposal.

751.X11

Recordkeeping.

Subpart F Chrysotile Asbestos

§ 751.X01

General.

This subpart sets certain restrictions on the manufacture (including import), processing, distribution in commerce, and commercial use and disposal of chrysotile asbestos to prevent unreasonable risk of injury to health in accordance with TSCA section 6(a), 15 U.S.C. 2605(a).

§ 751.X03

Definitions.

The definitions in subpart A of this part apply to this subpart unless otherwise specified in this section. In addition, the following definitions apply:

Aftermarket Automotive Brakes and Linings mean any automotive friction brake articles sold in the secondary market as replacement parts (*e.g.*, brake pads, linings and shoes) used in disc and drum brake systems on automobiles and trucks.

Article means a manufactured item:

(1) Which is formed to a specific shape or design during manufacture;

(2) Which has end use function(s) dependent in whole or in part upon its shape or design during end use; and

(3) Which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the article, and that result from a chemical reaction that occurs upon end use of other chemical substances, mixtures, or articles; except that fluids and particles are not considered articles regardless of shape or design.

Chrysotile asbestos is the asbestiform variety of a hydrated magnesium silicate mineral, with relatively long and flexible crystalline fibers that are capable of being woven.

Disposal means to discard, throw away, or otherwise complete or terminate the useful life of chrysotile asbestos, including any chrysotile asbestos-containing products or articles.

Distribution in commerce has the same meaning as in section 3 of the Act, but the term does not include distribution of chrysotile asbestos waste solely for purposes of disposal in accordance with this subpart.

Diaphragms means semipermeable diaphragms, which separate the anode from the cathode chemicals in the production of chlorine and sodium hydroxide (caustic soda).

Gasket means an article used to form a leakproof seal between fixed components.

Oilfield Brake Blocks means the friction brake blocks component in drawworks used in the hoisting mechanism for oil well drilling rigs.

Other Gaskets means gaskets other than *sheet gaskets in chemical production*, to include gaskets used in the exhaust systems of utility vehicles.

Other Vehicle Friction Products means friction articles such as brakes and clutches, other than *aftermarket automotive brakes and linings*, installed on any vehicle, including on off-road vehicles, trains, planes, etc. Vehicle Friction Products do not include articles used in the NASA Super Guppy Turbine aircraft, a specialty cargo plane used for the transportation of oversized equipment that is owned and operated by the National Aeronautics and Space Administration (NASA).

Processing has the same meaning as in section 3 of the Act, but the term does not include processing of chrysotile asbestos waste solely for purposes of disposal in accordance with this subpart.

Sheet Gaskets in Chemical Production means gaskets cut from sheeting, including asbestos-containing rubberized sheeting, that are used in chemical manufacturing facilities for extreme condition applications such as titanium dioxide manufacturing.

§ 751.X05

Restrictions on Conditions of Use.

(a) After [DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE], all persons are prohibited from the manufacture (including import), processing, distribution in commerce, and commercial use of chrysotile asbestos, including any chrysotile asbestos-containing products or articles, for:

(1) Diaphragms in the chlor-alkali industry; and

(2) Sheet gaskets in chemical production.

(b) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], all persons are prohibited from the manufacture (including import), processing, distribution in commerce and commercial use of chrysotile asbestos, including any chrysotile asbestos-containing products or articles, for commercial use of:

(1) Oilfield brake blocks;

(2) Aftermarket automotive brakes and linings;

(3) Other vehicle friction products; and

(4) Other gaskets.

(c) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], all persons are prohibited from the manufacture (including import), processing, and distribution in commerce of chrysotile asbestos, including any chrysotile asbestos-containing products or articles, for consumer use of:

(1) Aftermarket automotive brakes and linings; and

(2) Other gaskets.

§ 751.X07

[Reserved]

§ 751.X09

Disposal.

(a) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], all persons disposing of chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to § 751.X05(a)

(1), must dispose of chrysotile asbestos and any chrysotile asbestos-containing products or articles, as applicable:

(1) In accordance with the Asbestos General Industry Standard—(29 CFR 1910.1001(k)).

(2) In conformance with the asbestos waste disposal requirements at 40 CFR 61.150.

(b) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], all persons disposing of chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to § 751.X05(a)

(2) must dispose of chrysotile asbestos and any chrysotile asbestos-containing products or articles, as applicable:

(1) In accordance with the Asbestos General Industry Standard—(29 CFR 1910.1001(k))

(2) [Reserved]

(c) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], all persons disposing of chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to § 751.X05(b) must dispose of chrysotile asbestos and any chrysotile asbestos-containing products or articles, as

applicable:

(1) In accordance with the Asbestos General Industry Standard—(29 CFR 1910.1001(k)).

(2) In conformance with the asbestos waste disposal requirements at 40 CFR 61.150.

(d) After [DATE 180 DAYS AFTER EFFECTIVE DATE OF FINAL RULE], each manufacturer (including importer), processor, and distributor of chrysotile asbestos, including any chrysotile asbestos-containing products or articles, for consumer use, disposing of chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to § 751.X05(c), must dispose of chrysotile asbestos and any chrysotile asbestos-containing products or articles, as applicable:

(1) In accordance with the Asbestos General Industry Standard—(29 CFR 1910.1001(k)).

(2) In conformance with the asbestos waste disposal requirements at 40 CFR 61.150.

§ 751.X11

Recordkeeping.

(a) Each person, except a consumer, who disposes of any chrysotile asbestos and any chrysotile asbestos-containing products or articles subject to § 751.X09, after [DATE 180 CALENDAR DAYS AFTER EFFECTIVE DATE OF FINAL RULE] must retain in one location at the headquarters of the company, or at the facility for which the records were generated, documentation showing:

(1) Any records related to any disposal of chrysotile asbestos and any chrysotile asbestos-containing products or articles generated pursuant to, or otherwise documenting compliance with, regulations specified in § 751.X09.

(2) [Reserved]

(b) The documentation in paragraph (a) of this section must be retained for 5 years from the date of generation.

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