PETITION TO PROMULGATE REPORTING RULES FOR MERCURY MANUFACTURING, PROCESSING, AND IMPORTATION UNDER SECTION 8(a) OF THE TOXIC SUBSTANCES CONTROL ACT

June 24, 2015

Notice of Petition

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I. Introduction

The Natural Resources Defense Council (NRDC) and the majority of the state members of the Northeast Waste Management Officials' Association (NEWMOA) petition the U.S. Environmental Protection Agency (EPA) to promulgate a rule under section 8(a) of the Toxic Substances Control Act (TSCA)[1] requiring recordkeeping and reporting by manufacturers, processors, and importers into the United States of mercury, mercury compounds, or mercury-added products. Petitioners file this petition pursuant to TSCA section 21.[2]

The lack of comprehensive data on mercury production and use in the United States has been acknowledged by virtually all of the federal and state agencies involved in tracking or regulating the chemical in commerce. There is no mechanism in place for obtaining such data, and these data are necessary to prevent unreasonable risks of injury to human health and the environment created by the ongoing manufacture, processing, and importation of mercury and mercury compounds. The existing mechanism for gathering data on mercury use in products, administered by some states through the Interstate Mercury Education and Reduction Clearinghouse (IMERC), no longer collects data on most switches and relays, the largest mercury use in products, and contains significant gaps due to non-reporting. EPA acknowledged the need to act almost ten years ago, but the problem remains.

The recently adopted Minamata Convention on Mercury provides an additional impetus for collecting the mercury data necessary to protect the public from unreasonable risks from mercury exposure. By joining the Convention, the United States will assume obligations related to mercury uses in products and processes that cannot be discharged with the current gaps in data availability.

For the reasons set forth below, there is a reasonable basis to conclude that the rule Petitioners request is necessary to protect human health and the environment against an unreasonable risk of injury to health and the environment caused by ongoing mercury uses in products and processes in the United States.[3]

II. Petitioners

NRDC is a membership-based, non-profit environmental and public health advocacy organization with more than 1.4 million members and online activists nationwide. NRDC's mission is to safeguard the Earth: its people, its plants and animals, and the natural systems on which all life depends. To further this mission, NRDC works to reduce mercury pollution both domestically and internationally.

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[1] 15 U.S.C. § 2607(a).
[2] *Id.* § 2620.
[3] *See id.* § 2620(b)(4)(B)(ii).

Domestically, NRDC has advocated for substantial mercury-emission reductions during most of the relevant EPA rulemakings, and in rulemakings governing the potential phase-out of mercury use in the chlor-alkali sector. In addition, at the state level, NRDC works with a network of non-governmental organizations to develop state programs restricting mercury uses in products, and to improve the safe collection and management of mercury-added products at the end of their useful life. This state work has contributed to a large portion of the mercury reductions in product manufacturing achieved domestically to date.

Internationally, NRDC actively participated in negotiations culminating in the creation of the Minamata Convention on Mercury (the Convention), an international agreement whose objective is "to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds."[4] To facilitate implementation of the Convention, NRDC staff recently co-authored the Minamata Convention on Mercury Ratification and Implementation Manual, which provides guidance to government officials about how to meet their obligations under the Convention.[5]

NRDC also participates in a global non-governmental organization network called the Zero Mercury Working Group (ZMWG). ZMWG sponsors mercury awareness-raising and reduction activities in many countries, and promotes early ratification and implementation of the Convention.[6]

NRDC's address and phone number are:

Natural Resources Defense Council
40 West 20th Street
New York, NY 10010
Tel.: (212) 727-2700

For further information regarding NRDC's mercury activities, please contact David Lennett at (202) 289-6868 or dlennett@nrdc.org.

NEWMOA is a non-profit, non-partisan interstate association whose membership is composed of the state environmental agency directors of the hazardous waste, solid waste, waste site cleanup, and pollution prevention programs in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The majority of member states support NEWMOA's involvement in this petition. As described

[4] Minamata Convention on Mercury art. 1, Oct. 2013, *available at* http://www.mercuryconvention.org/Portals/11/documents/Booklets/Minamata%20Convention%20on%20Mercury_booklet_English.pdf (last visited Feb. 4, 2015) [hereinafter Minamata Convention] (attached as Exhibit 1).

[5] *See* David Lennett & Richard Gutierrez (2014), *Minamata Convention on Mercury Ratification and Implementation Manual*, *available at* http://www.nrdc.org/international/files/minamata-convention-on-mercury-manual.pdf (last visited Dec. 15, 2014) (attached as Exhibit 2).

[6] *See About Us*, Zero Mercury Working Group, http://www.zeromercury.org/index.php?option=com_content&view=article&id=116&Itemid=11 (last visited May 26, 2015) (attached as Exhibit 3).

below, NEWMOA administers IMERC, which has both NEWMOA state members and non-NEWMOA state members. Minnesota and Washington, non-NEWMOA state members of IMERC, expressly support NEWMOA's involvement in this petition as a co-petitioner on behalf of NEWMOA and IMERC.

NEWMOA's mission is to develop, lead, and sustain an effective partnership of states that helps achieve a clean, healthy, and sustainable environment by exploring, developing, promoting, and implementing environmentally sound solutions for:

- Reducing materials use and preventing pollution and waste;
- Properly reusing and recycling discarded materials that have value;
- Safely managing solid and hazardous wastes; and
- Remediating contaminated sites.

NEWMOA manages the Interstate Mercury Education and Reduction Clearinghouse (IMERC) to provide:

- Ongoing technical and programmatic assistance to states that have enacted mercury education and reduction legislation; and
- A single point of contact for industry and the public for information on mercury-added products and member states' mercury education and reduction programs.

IMERC facilitates deliberations that provide advice and assistance to the individual states for their decision-making. IMERC:

- Collects and manages data submitted by manufacturers of mercury-added products to implement notification provisions of state mercury-reduction legislation;
- Facilitates interstate collaboration on the development and implementation of public education and outreach programs on mercury-added products;
- Makes information on mercury-added products available to industry and the public;
- Responds to requests for information on mercury-added products, the requirements of the member states, and the status of state implementation of their laws; and
- Provides technical assistance and facilitates member reviews concerning manufacturers' applications for labeling of and exemptions to the phase-out of mercury-added products and manufacturers' plans for collection and proper waste management of mercury-containing materials.

IMERC's membership includes all NEWMOA member state agencies and non-NEWMOA member state agencies of California, Illinois, Louisiana, Michigan, Minnesota, North Carolina, and Washington.

NEWMOA's address and phone number are:

Northeast Waste Management Officials' Association
129 Portland Street, 6th Floor
Boston, Massachusetts 02114-2014
(617) 367-8558

For further information regarding NEWMOA's mercury activities, please contact Terri Goldberg, Executive Director of NEWMOA, at (617) 367-8558 or tgoldberg@newmoa.org.

III. Statutory Background

Congress enacted TSCA "with the express purpose of limiting the public health and environmental risks associated with exposure to and release of toxic chemical substances and mixtures,"[7] with a particular emphasis on "fill[ing] . . . regulatory gaps."[8] To facilitate EPA's regulation of chemical substances whose release into the environment may present unreasonable risks to public health and the environment, section 8(a) of TSCA "authorizes EPA to promulgate rules under which manufacturers (including importers) and processors of chemical substances must maintain records and submit information as the EPA Administrator may reasonably require."[9] Under section 8(a), EPA may require chemical manufacturers, processors, and importers to keep records of and report, among other information, "[t]he categories or proposed categories of use of each [chemical] substance," and "[t]he total amount of each such substance . . . manufactured or processed," including "the amount manufactured or processed for each of its categories of use."[10] "To the extent feasible," EPA must not require reporting "which is unnecessary or duplicative."[11]

Information gathering under section 8(a) can help EPA create "a total picture of the current situation" of uses of chemical substances.[12] As explained in more detail below, *see infra* Part VI.B, this total picture can help the agency attribute risk from the chemical to specific products or industrial processes, which in turn can help EPA identify the best tools and approaches to further reduce that risk. As EPA has explained, "[w]ith incomplete information regarding toxic chemical substances, public and private decision makers are unable to make adequate assessments of the benefits and costs of actions involving these substances."[13]

Section 8(a) rules are warranted when "adequate data are not otherwise available" for EPA "to determine where unreasonable risks from [the chemical] exist and the

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[7] *Physicians Comm. for Responsible Med. v. Johnson*, 436 F.3d 326, 327 (2d Cir. 2006).
[8] S. Rep. No. 94-698, at 1 (1976), *as reprinted in* 1976 U.S.C.C.A.N. 4491, 4491.
[9] Hydraulic Fracturing Chemicals and Mixtures, 79 Fed. Reg. 28,664, 28,665 (May 19, 2014).
[10] 15 U.S.C. § 2607(a)(2)(B), (C).
[11] *Id.* § 2607(a)(2).
[12] Asbestos Reporting Requirements, 47 Fed. Reg. 33,198, 33,198 (July 30, 1982).
[13] U.S. EPA, Economic Analysis for the Final Inventory Update Reporting (IUR) Modifications Rule 7-2 (June 30, 2011) (attached as Exhibit 4).

appropriate approaches to reduce those risks."[14] EPA has in the past promulgated section 8(a) rules to enable the agency to remain "apprised of the production volume of and exposure to [chemicals]" with "known adverse environmental effects and potential adverse human health effects."[15] Such section 8(a) rules enable the agency to "confirm the actual current uses" of a chemical of concern, which in turn enables the agency to "assess exposures and potential risks."[16]

As this petition explains in detail, adequate data are not currently available for ongoing mercury uses in products and processes, from which EPA could make informed and sound decisions about how best to reduce the associated risks to human health and the environment. Because EPA currently has no mechanism to collect information about ongoing mercury uses, the agency is also unable to monitor the possible development of new uses, which may increase potential exposure and may have significant human health and environmental effects.[17]

Through section 21 of TSCA, Congress enabled citizens to petition the EPA Administrator to initiate a TSCA section 8 rulemaking proceeding.[18] Section 21 petitions must "set forth the facts which it is claimed establish that it is necessary to issue . . . a rule" under section 8.[19] Section 21 also sets the applicable standard for judicial review if EPA denies a petition for rulemaking: the court shall order EPA to initiate the requested rulemaking proceeding when "there is a reasonable basis to conclude that the issuance of such a rule . . . is necessary to protect health or the environment against an unreasonable risk of injury to health or the environment."[20]

As set forth below in Parts V and VI, Petitioners have demonstrated that there is a reasonable—indeed, an ample—basis to conclude that a section 8(a) reporting rule for mercury is necessary to protect health and the environment against an unreasonable risk of injury to health and the environment from ongoing domestic uses of mercury in products and processes. EPA lacks adequate data from which it can evaluate possible approaches to further reduce risks from ongoing uses of mercury, which EPA itself has acknowledged "will . . . create potential exposure and risk for human health and the

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[14] Asbestos Reporting Requirements, 47 Fed. Reg. at 33,199.

[15] Hexachloronorbornadiene; Submission of Notice of Manufacture, Import, or Processing and Determination of Significant New Use, 50 Fed. Reg. 47,534, 47,535 (Nov. 19, 1985).

[16] EDTMPA and its Salts; Submission of Notice of Manufacture or Import, 53 Fed. Reg. 41,335, 41,335 (Oct. 21, 1988).

[17] *See* Reporting and Recordkeeping Requirements Category of Chemical Substances Known as Chlorinated Naphthalenes; Submission of Notice of Manufacture or Import, 49 Fed. Reg. 33,649, 33,651 (Aug. 24, 1984) (promulgating a section 8(a) rule in part because of a "concern[]" about increased exposure risk that could arise due to the development of new uses of the chemical).

[18] 15 U.S.C. § 2620(a).

[19] *Id.* § 2620(b)(1).

[20] *Id.* § 2620(b)(4)(B)(ii).

environment."[21] EPA cannot assess which regulatory or other options will reduce unreasonable risks from mercury exposure without comprehensive and current data about how mercury is being used in products and industrial processes. We urge EPA to collect this data pursuant to a reporting rule under TSCA section 8(a) to prevent such unreasonable risks.

IV. EPA should promulgate a section 8(a) reporting rule that captures comprehensive data about ongoing mercury and mercury-compound manufacture, processing, and importation

Petitioners request that EPA promulgate a TSCA section 8(a) rule that requires persons who manufacture, process, or import into the United States mercury, mercury compounds, or mercury-added products to keep records of and submit information to EPA concerning such manufacture, processing, or importation of mercury. As EPA itself has already found, gathering this updated information, along with subsequent analysis of that information, is "necessary" to inform EPA's future actions to reduce ongoing mercury uses in the United States.[22]

A. Definitions

Petitioners propose that the following definitions be applied to their proposed rule:

1. *Mercury* means the substance mercury, also identified as CAS No. 07439-97-6.
2. *Mercury-added product* means a product or product component that contains mercury or a mercury compound that was intentionally added, and is not excluded under section 3(2)(B) of TSCA.[23]
3. *Mercury compound* means any substance consisting of atoms of mercury and one or more atoms of other chemical elements that can be separated into different components only by chemical reactions.[24]
4. *Mixture* means any combination of two or more chemical substances if the combination does not occur in nature, and is not, in whole or in part, the result of a chemical reaction; except that such term does not include any combination

[21] U.S. EPA, EPA Strategy to Address Mercury-Containing Products 1 (Sept. 2014), *available at* http://www.epa.gov/mercury/pdfs/productsstrategy.pdf (last visited May 11, 2015) [hereinafter EPA Strategy Document] (attached as Exhibit 5).

[22] *Id.* at 2.

[23] This definition is taken from Article 2(f) of the Minamata Convention, and is intended to be consistent with the IMERC notification requirements. *See* Interstate Mercury Education and Reduction Clearinghouse, Instructions, Mercury-added Product Notification Form, http://www.newmoa.org/prevention/mercury/imerc/InstructionsSingle.pdf (attached as Exhibit 6), except insofar as TSCA precludes coverage of such products in the rule, such as medical devices, cosmetics, and other products regulated under the Food, Drug, and Cosmetic Act, as provided in Section 3 of TSCA. *See* 15 U.S.C. § 2602(2)(B)(vi).

[24] This definition is taken from the Minamata Convention. *See* Minamata Convention, *supra* note 4, at art. 2(e). Petitioners understand this definition to have the same meaning as EPA's definition under the Toxic Release Inventory. *See* 40 C.F.R. § 372.65(c).

which occurs, in whole or in part, as a result of a chemical reaction if none of the chemical substances comprising the combination is a new chemical substance and if the combination could have been manufactured for commercial purposes without a chemical reaction at the time the chemical substances comprising the combination were combined.

5. The *Interstate Mercury Education and Reduction Clearinghouse* (*IMERC*) means the entity composed of state officials designated to receive mercury-added product notifications from product manufacturers under applicable state law.

B. Persons who must report under the rule and exemptions

Petitioners request that EPA require the following persons to report under the rule:

Any person who manufactures[25] or processes for distribution in commerce[26] mercury, mercury compounds, or mixtures containing mercury at any point during an applicable reporting period under this rule. This includes manufacturers or processors of mercury-added products.

Petitioners propose that any processor or manufacturer who has submitted a mercury-added product notification approved by IMERC be considered in compliance with the federal reporting requirements under this rule for the products and calendar year covered by the IMERC notification.[27]

In addition, Petitioners propose that the exemptions set forth in 40 C.F.R. § 704.5 apply to this rule, with the exception of exemptions (a) (articles), (b) (byproducts) and (f) (small manufacturers). With respect to articles, Petitioners propose that EPA promulgate a section 8(a) reporting rule for mercury without the exemption in 40 C.F.R. § 704.5(a) for mercury imported or processed solely as part of an article. EPA has previously recognized that the articles exemption is not appropriate for TSCA reporting rules relating to mercury; all of the Significant New Use Rules (SNURs) for mercury uses in products eliminated the more general exemption for importing or processing elemental mercury as part of an

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[25] Petitioners use the term "manufacturer" to mean a person that "manufactures" a chemical substance, as defined under TSCA. *See* 15 U.S.C. § 2602(7) ("The term 'manufacture' means to import into the customs territory of the United States . . ., produce, or manufacture."). Petitioners' use of "manufacturer" thus includes those who import mercury, mercury compounds, or mercury-added products into the United States.

[26] Petitioners use the term "distribution in commerce" as that phrase is defined in 15 U.S.C. § 2602(4).

[27] *See* NEWMOA, *State Mercury-Added Product Notification Process*, http://www.newmoa.org/prevention/mercury/imerc/notificationinfo.cfm (last updated Apr. 17, 2015) (attached as Exhibit 7). Petitioners have not included in this petition reporting from persons who propose to manufacture or process mercury or mercury compounds, because we anticipate EPA using its SNUR authorities after the reporting rule is issued to require notifications of potential new uses or sources of mercury and mercury compounds, consistent with the three limited mercury-product SNURs already issued and cited immediately below.

article.[28] Mercury use as part of articles, including, e.g., switches and relays, is an important ongoing use of mercury in the United States. Without reporting information on uses of mercury as part of mercury-added products, the utility of the information EPA gathers under such a rule would be limited.

The general reporting exemption for byproducts is inappropriate in this case because one of the principal sources of mercury domestically and globally is byproduct mercury from mining other metals (such as gold) and natural gas production.[29] Because byproduct mercury from gold production is particularly significant in this country, excluding byproduct-mercury production from reporting would impair data collection on mercury-supply sources and the ultimate disposition of the mercury.[30]

Regarding small manufacturers, EPA has discretion to "prescribe standards for determining the manufacturers and processors which qualify as small manufacturers and processors" for purposes of TSCA section 8.[31] Under 40 C.F.R. § 704.3, which is applicable to other reporting rules, a company is exempt from reporting if it produces less than 100,000 pounds annually of an individual substance at any facility under the company's control and company total sales are less than $40 million per year (criterion 1), or if its sales are less than $4 million annually regardless of the quantity produced (criterion 2). Because mercury is a low-volume, bio-accumulative chemical, and is toxic at very low concentrations, the definition of "small manufacturer" contained in 40 C.F.R. § 704.3 is not appropriate here.[32]

Instead, Petitioners propose that EPA define "small manufacturers" for the portion of this section 8(a) rule applying to manufacturers (including importers) and processors of mercury, mercury compounds, or mixtures containing mercury (except those manufacturers or processors producing a mercury-added product) using the same quantity

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[28] Mercury Switches in Motor Vehicles; Significant New Use Rule, 72 Fed. Reg. 56,903, 56,904 (Oct. 5, 2007); Mercury Use in Flow Meters, Natural Gas Manometers, and Pyrometers; Significant New Use Rule, 75 Fed. Reg. 42,330, 42,331 (July 21, 2010); Elemental Mercury Used in Barometers, Manometers, Hygrometers, and Psychrometers; Significant New Use Rule, 77 Fed. Reg. 31,728, 31,729 (May 30, 2012).

[29] *See* United Nations Environment Programme, *Summary of Supply, Trade and Demand Information on Mercury* 28-31 (Nov. 2006), *available at* http://www.unep.org/chemicalsandwaste/Portals/9/Mercury/Documents/Publications/HgSupplyTradeDemandJM.pdf (attached as Exhibit 8).

[30] *See* Wilburn, D. R. (2013). Changing patterns in the use, recycling, and material substitution of mercury in the United States. *US Geological Survey: Reston, VA,* 32, *available at* http://pubs.usgs.gov/sir/2013/5137/pdf/sir2013-5137.pdf (attached as Exhibit 9).

[31] 15 U.S.C. § 2607(a)(3)(B).

[32] *See e.g.*, Chemical Substances When Manufactured or Processed as Nanoscale Materials; TSCA Reporting and Recordkeeping Requirements, 80 Fed. Reg. 18,330, 18,335-56 (Apr. 6, 2015) (EPA proposal to eliminate the criterion one threshold for nanoscale materials due to the low volume production profile of the relevant sector); *see also infra* Part VII (discussing EPA's Chemical Data Reporting Rule).

thresholds that EPA uses under the Toxic Release Inventory (TRI) Program.[33] Under such a definition, a manufacturer or processor of mercury, mercury compounds, or mixtures containing mercury would be exempt from the reporting and recordkeeping requirements if it manufactured or processed less than ten pounds of mercury or mercury compounds in a calendar year.

The ten-pound threshold is warranted given mercury's persistent and bio-accumulative nature: once released into the environment, mercury remains in the environment "for significant periods of time and concentrate[s] in the organisms exposed" to the chemical.[34] Even "small quantities of [persistent, bio-accumulative] chemicals are of concern"—indeed, chemicals like mercury that are both persistent and bio-accumulative "have the potential to pose significant exposures to humans and ecosystems over a longer period of time; even small amounts of [persistent bio-accumulative toxic] chemicals that enter the environment can accumulate to elevated concentrations in the environment and in organisms, and therefore have a greater potential to result in adverse effects on human health and the environment."[35] In the TRI context, EPA recognized that using higher thresholds for data collection for low-volume chemicals like mercury would capture "only a fraction of the releases from facilities otherwise subject to" the reporting requirements, and that the data on chemicals would provide "a distorted picture of potential exposures to humans and the environment."[36] Such incomplete data would be of "limited use for evaluating the potential exposures to humans and the environment" from ongoing mercury uses in products and processes.[37] As EPA has explained, using a higher reporting threshold for mercury—in the TRI context, the prior threshold was 10,000 or 25,000 pounds per year—would "not present a comprehensive view of toxic chemical exposure." These same considerations justify altering the definition of "small manufacturers" in the context of a mercury section 8(a) reporting rule.

We recognize that, in addition to quantity thresholds, the TRI Program limits reporting to those facilities that have ten or more full-time employees.[38] However, EPA's TSCA definition of small manufacturer in 40 C.F.R. § 704.3 does not contain a comparable employee numeric threshold for reporting.

Instead, as noted above, the TSCA definition contains two alternative annual sales thresholds, but given mercury's low volume and sales commercial profile, even mercury manufacturers and processors with small annual sales can be responsible for a significant segment of mercury production and use, and thus need to be included in the reporting scheme. For example, with total mercury production in the United States significantly less

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[33] *See* 40 C.F.R. § 372.28.

[34] Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals; Community Right-to-Know Toxic Chemical Reporting, 64 Fed. Reg. 58,666, 58,668 (Oct. 29, 1999).

[35] *Id.* at 58,669, 58,688.

[36] *See id.* at 58,688.

[37] *Id.*

[38] 40 C.F.R. § 372.22(a).

than 200 metric tons (MT) annually,[39] and the current purchase price of mercury at $3,000 per flask (34.5 kg),[40] the total value of mercury production in the United States is significantly less than $18 million. Thus, a manufacturer could produce up to 45.4 MT of mercury, account for 25% or more of total U.S. mercury production, and be exempt from reporting under 40 C.F.R. § 704.3. Similarly, under the second sales threshold criterion ($4 million sales regardless of quantity), a company could produce as much or even more mercury (up to 46 MT at current market prices) while remaining exempt from reporting. Such a result would eviscerate the reporting rule, and thus Petitioners propose no sales threshold.

For the portion of this section 8(a) rule applying to manufacturers or processors of mercury-added products, Petitioners propose no reporting exemption for small manufacturers. Under the federal rule we envision, the IMERC reporting program will continue to be the primary mechanism for obtaining the necessary mercury-product data, and the IMERC reporting program does not exempt small manufacturers regardless of how they may be defined. Accordingly, a federal reporting exemption for small manufacturers will create unnecessary confusion between the federal and state reporting requirements, and provide little or no economic benefit for companies already required to report under state law.

C. Information to report

1. Mercury, mercury compounds, and mixtures containing mercury

Petitioners request that EPA require manufacturers (including importers[41]) and processors of mercury, mercury compounds, or mixtures containing mercury (except those manufacturers or processors producing a mercury-added product) to submit at least the following information to EPA:

1. The company name and headquarters mailing address;
2. The name, mailing and email address, and telephone number of the reporter's principal technical contact;
3. The name and address of each site where mercury, mercury compounds, or mixtures containing mercury are manufactured or processed;
4. The total quantity (by weight) of mercury, mercury compounds, and mixtures containing mercury manufactured or processed for distribution in commerce per site during each calendar year of the reporting period, and the country of origin (and associated quantity) of any mercury, mercury compound, or mixture containing mercury imported during the calendar year;

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[39] *See infra* p. 32-33.

[40] *See* Applied Minerals, *Applied Minerals—Metals & Stocks*, http://www.appliedminerals.us/Metals.html (last visited Mar. 4, 2015) (attached as Exhibit 10).

[41] Petitioners are using the term "importer" to mean "anyone who imports a chemical substance . . . into the customs territory of the U.S. and includes the person liable for the payment of any duties on the merchandise, or an authorized agent on his behalf." 40 C.F.R. § 712.3(d).

5. For each site, the total quantity (by weight) of mercury, mercury compounds, or mixtures containing mercury sold or transferred offsite after having been manufactured or imported in each calendar year during the reporting cycle;
6. For each site, the maximum quantity of mercury or mercury compounds stored at any given time during the calendar year;
7. A narrative description of all categories of end uses of any mercury, mercury compounds, or mixtures containing mercury that are manufactured or processed by the reporter, including estimates of the amount of mercury, mercury compounds, or mixtures containing mercury (by weight) to be manufactured or processed for each of the categories of use identified. Reporters shall report all information that is known or reasonably ascertainable by the person reporting. In lieu of providing such estimates, the reporter may provide the identity and quantities by persons that received mercury, mercury compounds, or mixtures containing mercury from the reporter; and
8. A narrative description of the manufacturing or processing operation(s) involving mercury, mercury compounds, or mixtures containing mercury at each site.

2. Mercury-added products

Petitioners request that EPA require manufacturers or processors of mercury-added products (including products with mixtures of mercury) to submit the following information to EPA, consistent with the IMERC notification requirements:

1. The company name and headquarters mailing address;
2. The name, mailing and email address, and telephone number of the reporter's principal technical contact;
3. The product(s) or categories of products manufactured, processed, or imported;
4. Description and location of mercury-added components contained in each product (if applicable, listing each component separately);
5. Number of mercury-containing components in one unit of the larger product;
6. Total quantity (by weight in milligrams for fabricated products or concentration in parts per million for formulated products) of mercury in each mercury-added component of the product;
7. Total quantity of mercury (in grams) in all units sold within the United States in the particular calendar year of the reporting cycle;
8. For manufacturers or processors of mercury-added switches and/or relays, information concerning whether the switches and/or relays are manufactured or processed solely for the purpose of replacement where no feasible mercury-free alternative for replacement is available.[42]

[42] While information on switch and relay "replacement" status was not historically collected by IMERC, we note IMERC no longer requires reporting on most switches and relays, and thus EPA can and should collect these replacement data to facilitate its determination as to whether reported switch and relay manufacturing may fall within the replacement exclusion of the Minamata Convention, Annex A, subparagraph (c), *supra* note 4.

D. Timing of reporting requirements and method for reporting

Petitioners request that EPA require persons subject to this rule to submit the required reporting information once every three years, starting with calendar year 2016, on the same deadlines as those that apply to IMERC reporting. Accordingly, Petitioners request that reporters be required to submit the requisite information to EPA by March 31 of the calendar year following the year for which the report is prepared.

Petitioners also request that EPA require electronic reporting, similar to the reporting required under EPA's Chemical Data Reporting Rule under TSCA.[43] Such electronic submission will allow EPA to "immediately process and quickly begin to use the information" submitted,[44] and "save time, improve data quality, and increase efficiencies for both the submitters and the Agency."[45] We note IMERC has instituted electronic reporting, the IMERC electronic database is designed to share information with EPA through a National Environmental Information Exchange Network node, and an EPA electronic reporting database would facilitate the sharing of the data between IMERC and EPA (and the public as well).

E. Certification

Petitioners request that EPA require persons subject to this rule to attach the following statement to any information submitted to EPA in response to this rule: "I hereby certify that, to the best of my knowledge and belief, all of the attached information is complete and accurate." EPA should require that the statement be signed and dated by the company's principal technical contact. Such a statement is typically required to enhance the integrity of such reporting programs and to facilitate enforcement in the event of false reporting.

F. Recordkeeping

Petitioners propose that persons subject to the reporting requirements of this rule be required to retain documentation of information contained in their reports for a period of three years from the date of the submission of the report.[46]

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[43] 40 C.F.R. § 711.35; *see also* Chemical Substances When Manufactured or Processed as Nanoscale Materials, 80 Fed. Reg. at 18,336-37.

[44] TSCA Inventory Update Reporting Modifications, 75 Fed. Reg. 49,656, 49,661 (Aug. 13, 2010).

[45] Chemical Substances When Manufactured or Processed as Nanoscale Materials, 80 Fed. Reg. at 18,331-32.

[46] A three-year recordkeeping requirement is typical in the context of section 8(a) reporting rules. *See* 40 C.F.R. § 704.11.

V. There is a reasonable basis to conclude that ongoing domestic mercury uses in products and processes present an unreasonable risk to human health and the environment

As explained in detail below, exposure to mercury, methylmercury, and other mercury compounds may cause adverse health impacts, especially neurological harms.[47] The potential for mercury exposure to cause health harms is significant enough that EPA, along with fifty states, has published advisories encouraging people to limit their consumption of certain kinds of fish known to have high concentrations of methylmercury.[48] Eighty-one percent of all fish advisories in the United States are based at least partly on mercury, with twenty-five states having published statewide advisories for freshwater lakes and rivers, and sixteen states having published statewide advisories for coastal waters.[49] Despite the fact that "[s]ignificant progress"[50] has been made over the last three decades to reduce health risks from mercury uses in products and processes in the United States, EPA acknowledged in September 2014 that "mercury from ongoing uses *will* eventually *be released* [into the environment] and *create potential exposure and risk* for human health and the environment."[51]

Below, we amplify and explain in detail EPA's concern, which Petitioners share, that ongoing mercury uses "will . . . create potential exposure and risk for human health and the environment."[52]

A. Toxicity

Mercury in its most toxic form, methylmercury, readily crosses the placenta and the blood-brain barrier and is known to be neurotoxic, especially to the developing brain.[53] Several very large studies have shown solid associations between intrauterine

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[47] *See* U.S. EPA, *Mercury, Health Effects*, http://www.epa.gov/mercury/effects.htm (last updated Dec. 29, 2014) (attached as Exhibit 11); Mercury Switches in Motor Vehicles; Significant New Use Rule, 72 Fed. Reg. at 56,904.

[48] *See, e.g.*, U.S. EPA, *What You Need to Know About Mercury in Fish and Shellfish*, http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cfm (attached as Exhibit 12); Environmental Council of the States, Quicksilver Caucus, Status Report on Select Products, Processes and Technologies Utilizing Mercury 8 (2013) [hereinafter Quicksilver Caucus Report] (attached as Exhibit 13).

[49] *See* U.S. EPA, *National Listing of Fish Advisories: General Fact Sheet 2011*, http://water.epa.gov/scitech/swguidance/fishshellfish/fishadvisories/generalfs2011.cfm (last updated Dec. 20, 2013) (attached as Exhibit 14).

[50] U.S. EPA, *EPA's Roadmap for Mercury* 3 (2006), http://www.epa.gov/mercury/archive/roadmap/pdfs/FINAL-Mercury-Roadmap-6-29.pdf (attached as Exhibit 15).

[51] EPA Strategy Document, *supra* note 21, at 1 (emphasis added).

[52] *Id.*

[53] Myers, G. J., & Davidson, P. W. (1998). Prenatal methylmercury exposure and children: neurologic, developmental, and behavioral research. *Environmental Health Perspectives,* 106 (Suppl 3), 841 (attached as Exhibit 16).

methylmercury exposure and impaired neurobehavioral performance.[54,55] Neurological effects in children can also occur from early life exposures to mercury at low doses; the resulting effects can include diminished visual recognition memory (VRM)[56] and other neurological impairments such as decreased visual motor development and receptive vocabulary.[57,58] Some neurobehavioral deficits related to mercury exposure may take many years to manifest.[59]

Recent research has revealed that elevated levels of mercury in adults can trigger neurological deficits impacting fine-motor speed, dexterity, concentration, verbal learning, and memory.[60] Cardiovascular effects have also been reported in adults at environmentally relevant exposure levels, indicating increased risks of myocardial infarction (e.g., heart attacks), increased blood pressure, and thickening of the carotid artery (a measurement of atherosclerosis).[61,62,63,64] EPA has summarized the health and environmental effects of mercury in previous TSCA rulemakings.[65]

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[54] Grandjean, P., White, R. F., Weihe, P., & Jørgensen, P. J. (2003). Neurotoxic risk caused by stable and variable exposure to methylmercury from seafood. *Ambulatory Pediatrics, 3*(1), 18-23 (attached as Exhibit 17).

[55] Debes, F., Budtz-Jørgensen, E., Weihe, P., White, R. F., & Grandjean, P. (2006). Impact of prenatal methylmercury exposure on neurobehavioral function at age 14 years. *Neurotoxicology and Teratology, 28*(5), 536-547 (attached as Exhibit 18).

[56] Oken, E., Wright, R. O., Kleinman, K. P., Bellinger, D., Amarasiriwardena, C. J., Hu, H., Rich-Edwards, J. W., Gillman, M. W. (2005). Maternal fish consumption, hair mercury, and infant cognition in a U.S. cohort. *Environmental Health Perspectives*, 1376-80 (attached as Exhibit 19).

[57] Oken, E., Radesky, J. S., Wright, R. O., Bellinger, D. C., Amarasiriwardena, C. J., Kleinman, K. P., Hu, H., & Gillman, M. W. (2008). Maternal fish intake during pregnancy, blood mercury levels, and child cognition at age 3 years in a US cohort. *American Journal of Epidemiology*, 167(10), 1171-1181 (attached as Exhibit 20).

[58] Davidson, P. W., Myers, G. J., & Weiss, B. (2004). Mercury exposure and child development outcomes. *Pediatrics, 113*(Supplement 3), 1023-1029 (attached as Exhibit 21).

[59] Yoshida, M., Shimizu, N., Suzuki, M., Watanabe, C., Satoh, M., Mori, K., & Yasutake, A. (2008). Emergence of delayed methylmercury toxicity after perinatal exposure in metallothionein-null and wild-type C57BL mice. *Environmental Health Perspectives, 116*(6), 746-751 (attached as Exhibit 22).

[60] Yokoo, E. M., Valente, J. G., Grattan, L., Schmidt, S. L., Platt, I., & Silbergeld, E. K. (2003). Low level methylmercury exposure affects neuropsychological function in adults. *Environmental Health. 2*(1):8 (attached as Exhibit 23).

[61] Guallar, E., Sanz-Gallardo, M. I., Veer, P. V., Bode, P., Aro, A., Gómez-Aracena, J., Kark, J. D., Riemersma, R. A., Martín-Moreno, J. M., & Kok, F. J. (2002). Mercury, fish oils, and the risk of myocardial infarction. *New England Journal of Medicine, 347*(22), 1747-1754 (attached as Exhibit 24).

[62] Salonen, J. T., Seppänen, K., Nyyssönen, K., Korpela, H., Kauhanen, J., Kantola, M., Tuomilehto, J., Esterbauer, H., Tatzber, F. & Salonen, R. (1995). Intake of mercury from fish, lipid peroxidation, and the risk of myocardial infarction and coronary, cardiovascular, and any death in eastern Finnish men. *Circulation, 91*(3), 645-655, *available at* http://circ.ahajournals.org/content/91/3/645.long (attached as Exhibit 25).

[63] Choi, A. L., Weihe, P., Budtz-Jørgensen, E., Jørgensen, P. J., Salonen, J. T., Tuomainen, T. P., Murata, K., Nielsen, H. P., Petersen, M. S., Askham, J., Grandjean, P. (2009). Methylmercury exposure and adverse cardiovascular effects in Faroese whaling men. *Environmental Health Perspectives. 117*(3):367-72 (attached as Exhibit 26).

B. Exposure

Mercury is a highly neurotoxic contaminant that is most toxic when methylated. Biological processes in the watershed convert the mercury to methylmercury which accumulates in the food chain resulting in elevated levels in fish, other wildlife, and ultimately in humans.[66] Commonly consumed fish may have methylmercury levels 100,000 times that of the ambient water.[67] Mercury contamination of fish stocks is widespread in the United States.[68,69] Studies of mercury levels in fish in rivers, lakes, and streams across the United States found mercury levels exceeding the level for human health concern for a significant portion of the sites sampled.[70]

Newly deposited mercury has been shown to be more bioavailable and more rapidly converted to methylmercury and represents a greater fraction of the methylmercury which is incorporated into food chains and ultimately into fish.[71,72] Local sources have been implicated in elevated levels of mercury measured in ambient air,[73] precipitation,[74,75]

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[64] Jacob-Ferreira, A. L., Passos, C. J., Jordao, A. A., Fillion, M., Mergler, D., Lemire, M., Gerlach, R. F., Barbosa, F., Jr., & Tanus-Santos, J. E. (2009). Mercury Exposure Increases Circulating Net Matrix Metalloproteinase (MMP)-2 and MMP-9 Activities. *Basic & Clinical Pharmacology & Toxicology, 105*(4), 281-288 (attached as Exhibit 27).

[65] *See, e.g.*, Mercury Switches in Motor Vehicles; Proposed Significant New Use Rule, 71 Fed. Reg. 39,035, 39,040-41 (July 11, 2006).

[66] U.S. EPA, *How People are Exposed to Mercury*, http://www.epa.gov/mercury/exposure.htm (last updated Dec. 29, 2014) (attached as Exhibit 28).

[67] Effluent Limitations Guidelines and Standards for the Dental Category, 79 Fed. Reg. 63,258, 63,277 (Oct. 22, 2014).

[68] USGS. 2009. Recent Findings from the National Water-Quality Assessment (NAWQA) and Toxic Substances Hydrology Programs (as presented to the NAWQA National Liaison Committee, Aug. 21, 2009) (attached as Exhibit 29).

[69] *What You Need to Know About Mercury in Fish and Shellfish*, *supra* note 48.

[70] USGS. 2009. Mercury in Fish, Bed Sediment, and Water from Streams Across the United States, 1998-2005 (attached as Exhibit 30); Wathen, J. B., Lazorchak, J. M., Olsen, A. R., & Batt, A. (2015). A national statistical survey assessment of mercury concentrations in fillets of fish collected in the US EPA national rivers and streams assessment of the continental USA. *Chemosphere, 122*, 52-61., *abstract available at* http://www.sciencedirect.com/science/article/pii/S0045653514012636 (attached as Exhibit 31).

[71] *Recent Findings*, *supra* note 68.

[72] Hintelmann, H., Harris, R., Heyes, A., Hurley, J. P., Kelly, C. A., Krabbenhoft, D. P., Linberg, S., Rudd, J. W., Scott, K. J. & St. Louis, V. L. (2002). Reactivity and mobility of new and old mercury deposition in a boreal forest ecosystem during the first year of the METAALICUS study. *Environmental Science & Technology, 36*(23), 5034-5040 (attached as Exhibit 32).

[73] Manolopoulos, H., Snyder, D. C., Schauer, J. J., Hill, J. S., Turner, J. R., Olson, M. L., & Krabbenhoft, D. P. (2007). Sources of speciated atmospheric mercury at a residential neighborhood impacted by industrial sources. *Environmental Science & Technology, 41*(16), 5626-5633 (attached as Exhibit 33).

[74] Dvonch, J. T., Graney, J. R., Keeler, G. J., & Stevens, R. K. (1999). Use of elemental tracers to source apportion mercury in south Florida precipitation. *Environmental Science & Technology*, *33*(24), 4522-4527 (attached as Exhibit 34).

soils,[76] and methylmercury levels in biota, including fish.[77] Reductions in local mercury emissions levels have been tied to decreasing levels measured in the environment and biota.[78,79,80] Therefore, to achieve the National Academy of Sciences' public-health goal of reducing mercury concentrations in fish,[81] current mercury emissions should be ratcheted down, thereby decreasing the amount of mercury cycling through aquatic systems and reducing contamination of fish and people.

In addition to these sources of exposure, there may be other potential sources of exposure from mercury use in products and processes. As explained in detail below, *see infra* Part VI, there is insufficient national information about some categories of mercury use in products and processes, including, e.g., mercury exposure from flooring using polyurethane, and mercury in children's toys, to meaningfully assess the actual or potential exposure to humans from such uses. Petitioners ask EPA to promulgate a section 8(a) reporting rule so that such information can be gathered and analyzed so as to inform an adequate assessment of the sources of exposure to mercury from ongoing mercury uses in products and processes.

C. Risks presented by releases into the environment from ongoing uses of mercury in products and processes

EPA very conservatively estimates that more than 75,000 newborns each year may have increased risk of learning disabilities associated with in-utero exposure to methylmercury.[82] This figure likely underestimates the extent of risks to newborns: due to

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[75] White, E. M., Keeler, G. J., & Landis, M. S. (2009). Spatial variability of mercury wet deposition in eastern Ohio: summertime meteorological case study analysis of local source influences. *Environmental Science & Technology*,*43*(13), 4946-4953 (attached as Exhibit 35).

[76] Biester, H., Müller, G., & Schöler, H. F. (2002). Estimating distribution and retention of mercury in three different soils contaminated by emissions from chlor-alkali plants: part I. *Science of the Total Environment*, *284*(1), 177-189 (attached as Exhibit 36).

[77] Evers, D. C., Han, Y. J., Driscoll, C. T., Kamman, N. C., Goodale, M. W., Lambert, K. F., Holsen, T. M., Chen, C. Y., Clair, T. A., & Butler, T. (2007). Biological mercury hotspots in the northeastern United States and southeastern Canada. *Bioscience*, *57*(1), 29-43 (attached as Exhibit 37).

[78] Frederick, P. C., Hylton, B., Heath, J. A., & Spalding, M. G. (2004). A historical record of mercury contamination in southern Florida (USA) as inferred from avian feather tissue: Contribution R-09888 of the Journal Series, Florida Agricultural Experiment Station. *Environmental Toxicology and Chemistry*,*23*(6), 1474-1478 (attached as Exhibit 38).

[79] Driscoll, C. T., Han, Y. J., Chen, C. Y., Evers, D. C., Lambert, K. F., Holsen, T. M., Kamman, N.C., & Munson, R. K. (2007). Mercury contamination in forest and freshwater ecosystems in the northeastern United States. *BioScience, 57*(1), 17-28 (attached as Exhibit 39).

[80] Mercury in Fish, Bed Sediment, and Water from Streams Across the United States, 1998-2005, *supra* note 70.

[81] National Research Council, *Toxicological Effects of Methylmercury* (2000) (attached as Exhibit 40).

[82] U.S. EPA, *Trends in Blood Mercury Concentrations and Fish Consumption Among U.S. Women of Childbearing Age NHANES, 1999-2010* (July 2013) (attached as Exhibit 41); *see also How People are Exposed to Mercury*, *supra* note 66.

bio-concentration of methylmercury across the placenta, blood mercury concentrations exceeding 3.5 µg/L in maternal blood are a level of concern, in addition to concentrations exceeding 5.8 µg/L, which is the current U.S. EPA reference dose.[83] Three times more women of childbearing age—7.3%—have blood mercury levels exceeding 3.5 µg/L, indicating that up to 265,000 or more infants are born each year facing cognitive impacts from mercury exposure based on maternal blood levels.[84]

Some populations may face even greater risks: Asians, Pacific Islanders, and Native Americans are all more likely to have elevated blood mercury levels, as are women living in the Northeast and other coastal areas, or consuming a lot of fish.[85,86] A 2011 study of 1,465 newborns in Minnesota's Lake Superior Basin found eight percent of the newborns had blood mercury levels above 5.8 µg/l.[87]

Researchers have estimated that in the United States methylmercury toxicity is associated with between 376 and 14,293 excess cases per year of a level of cognitive impairment that would be considered mental retardation. The cost of caring for these children has been estimated between $500 million and $17.9 billion annually, and this cost will be incurred every year until mercury emissions are reduced. [88,89]

Mercury releases associated with mercury uses in products and processes contribute "significantly" to this mercury pollution.[90] For example, the disposal of mercury products at the end of their useful life has been identified as a significant source of mercury pollution leading to statewide advisories. This disposal may occur at steel plants that

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[83] Mahaffey, K. R., Clickner, R. P., & Jeffries, R. A. (2009). Adult women's blood mercury concentrations vary regionally in the United States: association with patterns of fish consumption (NHANES 1999–2004). *Environmental Health Perspectives*, *117*(1), 47-53 (attached as Exhibit 42).

[84] Based on data from the U.S. EPA Trends study of 2013 provided via personal communication, Jeffrey Bigler, USEPA, Bigler.Jeff@epa.gov, January 2014 (attached as Exhibit 43).

[85] Hightower, J. M., O'Hare, A., & Hernandez, G. T. (2006). Blood mercury reporting in NHANES: identifying Asian, Pacific Islander, Native American, and multiracial groups. *Environmental Health Perspectives*, *114*(2),173-175 (attached as Exhibit 44).

[86] Mahaffey, K.R., et al., 2009, *supra* note 83.

[87] Patricia McCann, Minnesota Department of Health, Mercury Levels in Blood from Newborns in the Lake Superior Basin, GLNPO ID 2007-942, Final Report, November 30, 2011 (attached as Exhibit 45).

[88] Trasande, L., Schechter, C. B., Haynes, K. A., & Landrigan, P. J. (2006). Mental retardation and prenatal methylmercury toxicity. *American Journal of Industrial Medicine*, *49*(3), 153-158 (attached as Exhibit 46).

[89] Trasande, L., Schechter, C., Haynes, K. A., & Landrigan, P. J. (2006). Applying cost analyses to drive policy that protects children: mercury as a case study. *Annals of the New York Academy of Sciences, 1076*: 911–923, *abstract available at* http://www.ncbi.nlm.nih.gov/pubmed/17119266 (attached as Exhibit 47).

[90] Great Lakes Regional Collaboration, *Mercury in Products Phase-Down Strategy* 1 (June 2008), *available at* http://www.glrc.us/documents/MercuryPhaseDownStrategy06-19-2008.pdf (attached as Exhibit 48).

recycle steel scrap contaminated with mercury switches and relays, and at waste incinerators that receive mercury-added products.[91]

Additional significant exposures may occur during product use, as a consequence of breakage or other factors. For example, EPA issued Significant New Use Rules (SNURs) for certain mercury-added measuring devices in 2012. Although at least some of the measuring devices involved were not associated with particularly high volumes of mercury use, EPA issued the SNUR because:

> At any point in the lifecycle, there is potential for mercury to be released as liquid or vapor. Workers and others can be exposed to the mercury and it can be released into water, air, or onto land as the mercury is transported, stored, and handled during manufacturing. While the barometers, manometers, hygrometers, and psychrometers are in use, the mercury can vaporize or spill due to breakage during transport, installation, maintenance, refilling, or repair. Other opportunities for release can occur at the end of the lifecycle of barometers, manometers, hygrometers, and psychrometers as these devices are removed from equipment and facilities, and handled during waste management.[92]

For these reasons, EPA and the Great Lakes states, for example, developed a strategy to phase out the use of mercury in these and other products.[93]

The lack of adequate data on mercury use in products and processes prevents a complete accounting of the full extent of the human health risks from exposure to mercury. This is exactly why the recordkeeping and reporting rule that Petitioners seek is necessary. EPA cannot fully address the health and environmental risks from mercury exposure without adequate data about ongoing mercury uses: "The lack of detail in available information means that [EPA] is not able to analyze the effects that regulatory or voluntary actions on a single product may have on a multi-product industry and to quantify expected reductions in risk."[94] In addition, such data collection is necessary to allow EPA to monitor any development of new mercury uses, so that the agency can assess the risks to human health that may be presented by such new uses.[95]

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[91] *Id.* at 9; *see also* Mercury Switches in Motor Vehicles; Significant New Use Rule, 72 Fed. Reg. at 56,905 (promulgating Significant New Use Rule for mercury-added motor vehicle switches due to risks posed by mercury emissions from steel plants recycling steel scrap).

[92] Elemental Mercury Used in Barometers, Manometers, Hygrometers, and Psychrometers; Significant New Use Rule, 77 Fed. Reg. at 31,730.

[93] *Mercury in Products Phase-Down Strategy*, *supra* note 90, at 26-30.

[94] Asbestos Reporting Requirements, 47 Fed. Reg. at 33,199.

[95] *See* Reporting and Recordkeeping Requirements Category of Chemical Substances Known as Chlorinated Naphthalenes; Submission of Notice of Manufacture or Import, 49 Fed. Reg. 33,649, 33,649, 33,651 (Aug. 24, 1984).

D. Risk reduction

EPA has repeatedly recognized the need to reduce risks from mercury, and has previously taken regulatory action under TSCA and other federal laws to work toward reducing those risks. For example, EPA promulgated a Significant New Use Rule (SNUR) under TSCA section 5(a) for elemental mercury used in certain "convenience light switches, anti-lock braking system (ABS) switches, and active ride control system switches."[96] While EPA could not quantify the benefits of this action, EPA took this action because "reduction in mercury emissions from various sources could lead to improvements in overall ecosystem health."[97]

Similarly, EPA promulgated a SNUR covering mercury-added flow meters, natural gas manometers, and pyrometers, because of the risk of human exposure to mercury during the products' manufacture, use, and disposal at the products' end of life.[98] About two years later, EPA promulgated a SNUR covering mercury-added barometers, manometers, hygrometers, and psychrometers, essentially for the same reasons.[99]

EPA recently proposed a rule under the Clean Water Act that sets technology-based pretreatment standards "for discharges of pollutants [including mercury] into publicly owned treatment works" from dental practices. The proposed standards are estimated to reduce nationwide annual mercury discharges to surface waters from 880 pounds to fourteen pounds.[100] EPA took this action even though limitations regarding the scientific understanding of the environmental fate and transport of mercury prevented preparation of a quantified environmental benefits analysis.[101] EPA also recently finalized rules governing emission standards for hazardous air pollutants, including mercury, from coal- and oil-fired electric utility steam-generating units.[102]

Based on available cost analyses from previous TSCA rulemakings, the cost of Petitioners' proposed rule would likely be relatively small. For example, EPA estimated that the costs to produce a full report for the TSCA section 8 Inventory Update Reporting rule would be approximately $8,000 to $9,000 per report for the initial cycle (including compliance determination, recordkeeping, rule familiarization and preparation and submission of the report), and between $5,000 and $6,000 for each reporting cycle

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[96] Mercury Switches in Motor Vehicles; Significant New Use Rule, 72 Fed. Reg. at 56,903.

[97] Mercury Switches in Motor Vehicles; Proposed Significant New Use Rule, 71 Fed. Reg. at 39,039.

[98] Elemental Mercury Used in Flow Meters, Natural Gas Manometers, and Pyrometers; Significant New Use Rule, 75 Fed. Reg. at 42,332.

[99] Elemental Mercury Used in Barometers, Manometers, Hygrometers, and Psychrometers; Significant New Use Rule, 77 Fed. Reg. at 31,730.

[100] Effluent Limitations Guidelines and Standards for the Dental Category, 79 Fed. Reg. at 63,258, 63,277.

[101] *Id*. at 63,277.

[102] *See* Reconsideration of Certain Startup/Shutdown Issues: National Emission Standards for Hazardous Air Pollutants, 79 Fed. Reg. 68,777 (Nov. 19, 2014).

thereafter.[103] EPA estimated that it would cost the agency roughly $15 to process each report for the first reporting cycle, and only $2 to process each report for all future reporting cycles.[104] These cost figures overestimate the cost of a report under Petitioners' proposed section 8(a) rule, because the Inventory Update Reporting rule we are using as a comparator requires reporting of more information than does Petitioners' proposed section 8(a) rule for mercury.[105]

The universe of manufacturers and processors subject to new reporting requirements as a consequence of the proposed rule would be relatively small, although Petitioners cannot quantify the universe because (as the U.S. Geological Survey has observed) there is no current mechanism for identifying the companies involved. It is simply not known how many companies use mercury or mercury compounds in industrial processes, or manufacture or import mercury-added products but do not provide data on mercury use to IMERC.[106] The universe of U.S. mercury producers appears limited (based on representations EPA has made to NRDC), and historical IMERC data on switch and relay manufacturers suggests this number is fewer than fifty. Given that manufacturers of mercury-added products that are already reporting to IMERC would incur no increased costs under our proposal, it is reasonable to expect the overall costs imposed by this rule would be minimal.

VI. A section 8(a) reporting rule covering ongoing mercury and mercury-compound production, and uses in products and processes, would result in substantial benefits

A. EPA lacks data about ongoing mercury uses in products and processes

Almost a decade ago, in its 2006 Roadmap for Mercury, EPA pledged to create a national database on mercury use in products and processes. Under the heading "Need for a National Mercury Use Database," EPA stated:

> Reliable and publicly available data on mercury use is a prerequisite to gauging the success of EPA initiatives to reduce the use of mercury.

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[103] Economic Analysis for the Final Inventory Update Reporting (IUR) Modifications Rule, *supra* note 13, at 4-58 tbl.4-53 (numbers reported in 2008$) (note that some sites may submit multiple reports because multiple chemical compounds may be manufactured or processed at a given site).

[104] *Id.* at 5-32 tbl.5-48.

[105] *See* 40 C.F.R. § 711.15. Similarly, we note most of the cost burden estimate of reporting under the proposed section 8(a) rule for nanoscale materials is associated with information not covered by this petition, such as data on human exposure and environmental releases, and test data. *See* U.S. EPA, Economic Analysis for the TSCA Section 8(a) Proposed Reporting Requirements for Certain Chemical Substances as Nanoscale Materials 3-3 tbl.3-3 (Mar. 12, 2015) (attached as Exhibit 49).

[106] 4,4'-Methylenebis (2-Chloroaniline); Final Reporting and Recordkeeping Requirements, 51 Fed. Reg. 13,220, 13,222 (Apr. 18, 1986) (explaining that EPA "is not able to determine the total cost of industry compliance with the section 8(a) reporting requirements, because it is not possible to estimate accurately the number of companies that will submit section 8(a) reports in response to the rule").

> In 1998 the US Geological Survey discontinued its annual reporting of mercury use, *due to low voluntary response from mercury use manufacturers*.[107]

Citing the limited reach of data provided by the chlor-alkali sector, and the IMERC database for mercury use in products, EPA determined that a national mercury-use database was needed to make further progress toward reducing mercury-related risks. EPA indicated it would explore "various mechanisms" to improve the "comprehensiveness and reliability" of the existing data on mercury use, supply, and substitutes, with the goal of developing the database in 2007.[108]

Now, nine years later, there is still no national database on mercury supply or use; the gaps in the data collected by others are worsening (as explained further below); and EPA is currently pursuing a voluntary strategy to obtain the necessary data notwithstanding the earlier U.S. Geological Survey (USGS) experience that a voluntary strategy was ineffective. The Executive Branch has turned full circle, but still has neither a mercury production and use database, nor a credible plan to develop one.

Indeed, in its recently published Strategy to Address Mercury-Containing Products ("EPA Strategy"), the Agency acknowledged the continuing need for "more robust" data on mercury used in products and processes, and to "enhance" data on the manufacture, import, and export for some categories of mercury product use, in order to determine priorities for additional mercury reduction activities.[109] EPA "hope[d]" that such information would be forthcoming voluntarily from mercury producers, importers, and others, but pointed to no substantial evidence that would justify such a hope (let alone to rebut the evidence from which one could reasonably conclude that this hope would be dashed), and acknowledge[d] that regulatory options may need to be developed if the voluntary responses are insufficient.[110] Now, months later, as explained below in Part VII, mercury producers have *not* voluntarily supplied the information EPA sought, and the Agency will now need to turn to involuntary approaches.

As EPA points out in its Strategy, the need for an adequate national mercury supply and use database is twofold: (1) to achieve additional mercury-use reductions to prevent unreasonable risks to human health and the environment from mercury releases into the environment; and (2) to assist the United States in its implementation obligations under the Minamata Convention on Mercury. The first justification is consistent with the Agency's 2006 Roadmap. The second justification arises from the United States officially joining the Convention in 2013, and thus makes the case for the national database even more compelling.

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[107] *EPA's Roadmap for Mercury*, *supra* note 50, at 38 (emphasis added).
[108] *See id.* at 38-39.
[109] EPA Strategy Document, *supra* note 21, at 1.
[110] *Id.* at 1-3.

B. Comprehensive data will improve EPA's ability to assess risks from mercury and make informed decisions about how to reduce those risks

EPA has already recognized that to evaluate possible methods by which risks from mercury pollution can be reduced, the Agency must first update its information about ongoing uses of mercury in products and processes.[111] As EPA has explained, "[s]creening chemical substances for potential risks is an essential first step in developing and prioritizing risk management activities. Effective risk-screening by EPA depends on the ability to characterize chemical substance uses accurately and to predict potential exposures."[112] In this way, incomplete and non-comprehensive data hampers EPA's ability to effectively assess risks from exposure to mercury. "The more EPA can base its decisions on actual data, rather than on assumptions, the better EPA is able to tailor its risk management decisions to the level of actual risk, . . . Ultimately, an enhanced risk screening process will have positive consequences for human and ecosystem health, and will use EPA's and society's resources more efficiently."[113] EPA has further explained:

> [D]ecisions regarding whether, when, and how to target chemical substances for further risk assessment can be misdirected if basic risk-screening information is unavailable or inadequate. With more information, EPA can better direct its limited resources towards high-priority risks. Improved information can therefore help lead to more socially optimal reductions in risks to humans and the environment.[114]

Accordingly, as a general matter, EPA has already recognized the benefits of obtaining comprehensive data about chemical exposure for its risk-assessment and risk-reduction activities. Below we identify specific benefits relevant to mercury and mercury compounds.

1. EPA needs data on mercury use in polyurethane manufacturing to reduce the health risks to the public from such use

State officials recently identified mercury use in polyurethane manufacturing as a priority data gap for EPA.[115] They considered it a priority because "[m]ercury-based

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[111] *Id.* at 2-3.

[112] Economic Analysis for the Final Inventory Update Reporting (IUR) Modifications Rule, *supra* note 13, at 7-2.

[113] *Id.* at 7-1.

[114] *Id.* at 7-2.

[115] *See* Quicksilver Caucus Report, *supra* note 48, at 12-14. The Quicksilver Caucus is a coalition of state environmental association leaders working on mercury use and release reduction. Those associations are the Environmental Council of the States, the Association of Clean Water Agencies, the Association of State Drinking Water Administrators, the Association of State and Territorial Solid Waste Management Officials, the National Association of Clean Air Agencies, and the National Pollution Prevention Roundtable.

catalysts are known to have been extensively used in product manufacture with mercury being incorporated in some products. Documented exposures to children attributable to mercury releases from gym flooring and mats raise the level of concern. There is very limited data on overall use."[116]

Examples of this documented exposure and risk to children include guidance from the Minnesota Department of Public Health indicating that "if [a] floor contains mercury at 20 ppm or more, the mercury vapor in the gym may approach or exceed levels of health concerns under some conditions,"[117] and recommendations from the Ohio Department of Public Health regarding a particular floor product made using a mercury catalyst.[118] In response to the risks posed by the presence of use of mercury catalysts in polyurethane manufacturing, the European Union (EU) recently prohibited the manufacture or sale of five mercury catalysts used for this purpose if the mercury concentration exceeds 0.01% by weight, as well as the sale of products containing such catalysts if the mercury concentration in the products exceeds 0.01% by weight, effective October 10, 2017.[119] Because of the lack of data regarding mercury use in polyurethane manufacturing, the Quicksilver Caucus recommended that EPA "track" this mercury use in manufacturing using TSCA and/or other mechanisms.[120]

Under Paragraph 3 of Article 5, and Annex B of the Convention, the United States must take measures to restrict mercury-catalyst use in polyurethane manufacturing, aiming to phase out this use within ten years of the entry into force of the Convention. Under Paragraph 5 of Article 5, the United States must also endeavor to identify polyurethane manufacturing facilities using mercury in this country within three years of the Convention entering into force,[121] submit information on the number of facilities and the estimated quantity of mercury or mercury compounds used at these facilities, and take

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[116] *Id.* at 45.

[117] Minnesota Department of Health, *Mercury Flooring Testing and Mitigation: Guidance for Environmental Professionals*, http://www.health.state.mn.us/divs/eh/hazardous/topics/mercury/hgflooringprofguide.html (last updated Sept. 27, 2012) (attached as Exhibit 50). A Health Consultation conducted by the Agency for Toxic Substances and Disease Registry within the U.S. Department of Health and Human Services found mercury vapor concentrations in some Minnesota school gyms to be above the agency's recommended limits. U.S. Dep't of Health & Human Servs., Agency for Toxic Substances and Disease Registry, Health Consultation: Mercury-Containing Polyurethane Floors in Minnesota Schools (Sept. 28, 2006), *available at* http://www.atsdr.cdc.gov/HAC/pha/MercuryVaporReleaseAthleticPolymerFloors/MercuryVaporRelease-FloorsHC092806.pdf (attached as Exhibit 51).

[118] *See* Ohio Dep't of Health, Bureau of Envtl. Health, Mercury Exposure Tartan Brand Polymer Flooring, *available at* http://www.odh.ohio.gov/~/media/ODH/ASSETS/Files/eh/HAS/mercuryfloorstartan.ashx (attached as Exhibit 52).

[119] *See* Commission Regulation (EU) No. 848/2012 (Sept. 19, 2012), as published in Official Journal of the European Union, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R0848&from=EN (attached as Exhibit 53).

[120] Quicksilver Caucus Report, *supra* note 48, at 14.

[121] Assuming the Convention enters into force in 2016 or 2017, the facilities should be identified by 2019 or 2020 respectively.

measures to reduce mercury emissions and releases from such facilities. Accordingly, for both risk-reduction and Convention-obligation purposes, EPA will need data on the companies engaged in mercury-catalyst use, production, and importation for polyurethane manufacturing.

2. Reporting is needed to gather data about mercury use in products

Similarly, with respect to mercury-added products, the United States indicated in its ratification instrument that it will meet its Convention obligations using the alternative compliance mechanism of Article 4, Paragraph 2.[122] Under Paragraph 2, the United States government must demonstrate it has already achieved a de minimis level of mercury use for a majority of the mercury-added products to be restricted under the Convention, and then implement measures or strategies to reduce mercury use in restricted products for which a de minimis value is not yet obtained. In its ratification instrument, the United States indicated it lacks sufficient data to demonstrate a de minimis value for switches and relays.[123] Significantly, this data gap will now become more severe since the states stopped collecting most data on national mercury use in switch and relay manufacturing in 2010, as discussed further below.[124]

In 2010, IMERC estimated that 19.43 tons of mercury was used to make switches and relays sold in the United States. This was the largest value for any domestic mercury product category in 2010, and not de minimis at that time.[125] An individual switch can contain up to sixty-seven grams of mercury, while a relay unit may contain up to 400 grams. EPA's own 2008 risk-based prioritization for mercury in products found switches and relays to be a "high priority, special concern," warranting action to reduce human and environmental exposures to elemental mercury and methylmercury.[126]

The risks have driven regulatory action in other countries, and in many states. The European Union generally prohibits the use of mercury in electronic products, such as

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[122] *See* United States of America Notification Under Article 4, Paragraph 2, of Information on Domestic Measures & Strategies Implemented to Address Mercury-Added Products, Including those in Part I of Annex A to the Minamata Convention on Mercury, *available at* http://www.mercuryconvention.org/Portals/11/documents/submissions/USA%20declaration_Art%204%20para%202.pdf (attached as Exhibit 54).

[123] *Id.* at 5.

[124] *See* IMERC Fact Sheet: Mercury Use in Switches & Relays 4 (Jan. 2014), *available at* http://www.newmoa.org/prevention/mercury/imerc/factsheets/switches_relays_2014.pdf (last visited May 11, 2015) (attached as Exhibit 55).

[125] *Id.*

[126] *See* U.S. EPA, *Initial Risk-Based Prioritization of Mercury in Certain Products* 6 (Nov. 2008), *available at* http://www.epa.gov/hpvis/rbp/Mercury_RBP_10.31.08_FINAL.pdf (attached as Exhibit 56).

switches and relays, in the RoHS Directive first promulgated in 2003.[127] Similarly, Canada recently promulgated regulations generally prohibiting the manufacture or import of a mercury-added switch or relay.[128] As IMERC reports, sixteen states prohibit the sale of at least some mercury-added switches and relays.[129]

Therefore, for both risk-reduction and Convention-obligation purposes, EPA will require new and better data to either demonstrate a de minimis value has now been achieved for switches and relays, or to develop mercury-reduction measures and strategies for this product category, and then track the progress achieved.[130]

Other various activities undertaken by the states reinforce the need for better mercury-use data on other products and processes to achieve mercury risk reductions. For example, the recent State Quicksilver Caucus Report points to rotational balancing products (i.e., wheel weights) in which up to twenty-eight ounces of mercury is placed inside a tubal ring for use on axles and flyweights. As the Quicksilver Caucus observed, this large quantity of mercury in individual units "and the nature of the application would appear to involve risks of product leakage/breakage."[131]

Several states prohibit the use of mercury in wheel weights, but national use data are lacking on this product notwithstanding applicable IMERC reporting requirements. Non-mercury alternatives are readily available. Accordingly, the Quicksilver Caucus recommended that EPA collect data on the quantity of these devices manufactured and imported into the United States (and presumably the quantity of mercury involved), among other data needed to support further mercury-reduction actions.[132]

Under the State of Washington Children's Safe Product Act, RCW 70.240, manufacturers of children's products sold in that state must report the presence of high concern chemicals in these products.[133] Mercury and mercury compounds are on the list of "high concern" chemicals.[134] Under this program, manufacturers have reported a wide variety of intentional uses of mercury or mercury compounds in children's products, including:

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[127] *See* European Commission, *Restriction of Hazardous Substances in Electrical and Electronic Equipment*, http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm (last updated June 16, 2015) (attached as Exhibit 57).

[128] *See* Products Containing Mercury Regulations, 148 Canada Gazette 2686, 2861-2904 (Nov. 19, 2014), *available at* http://www.gazette.gc.ca/rp-pr/p2/2014/2014-11-19/pdf/g2-14824.pdf (attached as Exhibit 58).

[129] *See IMERC Fact Sheet*, *supra* note 124, at 4.

[130] In its recent EPA Strategy Document, the Agency singles out the importance of updating the data set for the switches-and-relays product category, presumably for this reason.

[131] Quicksilver Caucus Report, *supra* note 48, at 45.

[132] *Id. at* 15-17. Canada recently prohibited mercury use for this and other product applications, singling out wheel weights as an important justification for its regulatory approach. *See Products Containing Mercury Regulations*, *supra* note 128, at 2861-2904.

[133] Wash. Rev. Code § 70.240.040 (2015).

[134] Wash. Admin. Code § 173-334-130 (2015).

- Germicidal or preservative agents in children's car seats;
- Coloring agents in footwear and card games;
- Stabilizers in children's jewelry, puzzles and board games;
- Plasticizers/softeners in paint supplies; and
- Manufacturing additives in children's clothing, including underwear.[135]

Manufacturers also reported the presence of mercury and mercury compounds in other children's products, such as body wash, fragrances, false nails, lipsticks, bibs, sleepwear and other clothing, and toy vehicles. In several instances, the mercury concentration exceeded 1,000 ppm (in handwear). The breadth of the reported mercury uses and detections just for children's products demonstrates that mercury uses in products and processes overall are both ongoing and significant. In its 2008 risk-based prioritization of mercury in products, EPA acknowledged the need to gather additional information on mercury-containing toys, jewelry, and novelty items, categorizing these products as a "high priority special concern."[136]

Under Article 5, Paragraph 7 of the Convention, the United States must discourage the intentional use of mercury or mercury compounds in any manufacturing process which did not exist when the Convention comes into force, or otherwise demonstrate to the satisfaction of the Convention Conference of the Parties (COP) that no mercury-free alternatives provide comparable significant environmental and health benefits. To comply with this Convention mandate, the United States will likely require a mechanism for identifying and reaching those manufacturing processes using mercury which may be initiated after the Convention comes into force, and thus by implication will greatly benefit from a database of the manufacturing processes using mercury before the Convention enters into force. Such a database would also facilitate U.S. compliance with Paragraph 8 of Article 5 and Paragraph 1 of Article 17 regarding the exchange of information regarding mercury use in manufacturing processes, and in the review of Annex B of the Convention under Paragraphs 10 and 11 of Article 5.

Similarly, under Article 4, Paragraph 6 of the Convention, the United States must discourage the intentional use of mercury or mercury compounds in any product manufacturing which did not exist when the Convention comes into force, unless an assessment demonstrates environmental or human health benefits. The United States is required to provide information on the risks and benefits of such new product types. To comply with this Convention mandate, the United States will likely require a mechanism for identifying new types of mercury products which may be produced after the Convention comes into force, and thus by implication will greatly benefit from a complete database of the products using mercury before the Convention enters into force. Such a database would

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[135] Washington State Department of Ecology, Children's Safe Product Act Reported Data, https://fortress.wa.gov/ecy/cspareporting/Reports/ReportViewer.aspx?ReportName=ChemicalReportByName (last visited Mar. 4, 2015) (search "mercury & mercury compounds including methyl mercury (22967-92-6)" from [June 1, 2012] to [December 6, 2014]) (attached as Exhibit 59).

[136] *See Initial Risk-Based Prioritization*, *supra* note 126, at 6.

also facilitate United States compliance with Paragraph 1 of Article 17 regarding the exchange of information regarding mercury-added products and their alternatives, and in the review of Annex A under Paragraphs 8 and 9 of Article 4.

This need for vigilance regarding new mercury uses in products and industrial processes is reinforced by a newly invented mercury-added product now on the market which allegedly protects against "tennis elbow."[137] This product is available on Amazon, but the website product description fails to inform potential buyers that the "high density liquid" used to absorb vibrations is mercury.[138] Buyers therefore may be completely unaware they have brought a mercury product into their homes, creating potential health risks if the product breaks or leaks.

Similarly, the Quicksilver Caucus identified potential new applications of mercury in nanotechnology as a priority concern due to the rapid growth of these technologies:

> The use of existing systems to track and restrict the use of nano-mercury is most likely the most challenging project the U.S. and state human and environmental health agencies may need to tackle. Given how new this technology is, it makes sense to begin assessing the use of nano-mercury in research and unregulated products.[139]

Noting the lack of laws or regulations to currently identify mercury uses in nanotechnology, the Caucus recommended that the U.S. government implement mechanisms to track such mercury uses.[140] The use of TSCA section 8(a) authority would meet this need.[141]

In their recent progress report on the Great Lakes mercury-product phase-down strategy, EPA (Region V) and the Great Lakes states identified new mercury uses in automotive headlamps and wheel and driveshaft/flywheel balancing products in the transportation sector as applications where non-mercury alternatives were historically employed. They further noted mercury novelty items "ha[ve] become a serious issue," and thus concluded:

> Because of the extensive resources that will be required to prevent mercury in these new uses from entering the environment, it is counterproductive to allow new uses to gain hold. Therefore, it is

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[137] Tenex Corp., https://www.tennis-elbow.com/ (last visited Mar. 4, 2015) (attached as Exhibit 60).

[138] *See* Amazon, *Tenex Tennis Elbow Reliever*, http://www.amazon.com/Tenex-Tennis-Elbow-Reliever-Color/dp/B003MHUE9A (last visited May 11, 2015) (attached as Exhibit 61).

[139] Quicksilver Caucus Report, *supra* note 48, at 27.

[140] *Id.* at 31.

[141] Indeed, EPA recently proposed a one-time section 8(a) reporting requirement for nanoscale materials. *See* Chemical Substances when Manufactured or Processed as Nanoscale Materials, 80 Fed. Reg. 18,330.

important that legislation banning mercury in products be as broad as possible, and not limited to existing uses.[142]

In sum, there are glaring data gaps on mercury use in products and processes which present a significant potential for human and environmental exposure to mercury and methylmercury. These data gaps have been identified by both EPA and state officials, and acknowledged years ago by EPA without corrective action taken. With the Convention obligations now pending as well, EPA should seize the moment and collect the data necessary to develop an accurate inventory of mercury production and use in the United States.

3. EPA needs data on mercury stocks

Under Article 3, Paragraph 5(a) of the Convention, governments are obligated to endeavor to identify stocks of mercury or specified mercury compounds (as defined in Paragraph 1(b) of Article 3) exceeding fifty metric tons, and sources of mercury supply generating stocks exceeding ten metric tons per year.[143] The types of private companies or facilities which may potentially own or generate such stocks in the United States include, but are not limited to:

- Mercury or mercury compound traders (i.e., companies importing elemental or commodity-grade mercury, or importing/exporting mercury compounds);
- Non-ferrous metal mining or processing facilities;
- Mercury cell chlor-alkali facilities;
- Mercury waste treatment or product recycling facilities (i.e., facilities with mercury retorts); and
- Mercury compound and catalyst producers.

For most of these companies or facilities, there are no data currently collected, as discussed immediately below. Even with respect to mercury imports, which are reported under various trade databases, the transactions are not individually recorded, thus company-specific data are not typically available.

VII. Petitioners seek rulemaking under TSCA because no other federal law or state authority provides a mechanism sufficient to gather comprehensive data about mercury use and production in the United States

Petitioners seek relief under TSCA because there is no other federal or state mechanism in place that collects the data on mercury production and use in the United States necessary to inform risk-reduction activities. Recently, the USGS attempted to quantify the principal sources of mercury in this country and their subsequent flows in

[142] Great Lakes Regional Collaboration, *Great Lakes Mercury in Products Phase-Down Strategy Progress Report* 18 (July 31, 2013), *available at* http://glrc.us/initiatives/toxics/MercuryPhaseDown.pdf (attached as Exhibit 62).

[143] Minamata Convention, *supra* note 4, at art. 3, para. 5(a).

commerce. USGS was forced to estimate "[m]uch of the data," because "[r]eliable annual data are difficult to obtain because the use of mercury has been in decline, mercury is a low-volume commodity, and tracking of mercury recycling and sales are not mandated."[144]

With respect to mercury production, while the State of Nevada collects information on mercury produced as a byproduct of gold and silver mining in that state, no information is collected on the secondary production of mercury from other sources, such as the recycling of wastes and products, because "there is no data collection or reporting program at the national level."[145] Since different mercury recycling companies mix different inflow materials, use different processes to produce mercury, and the byproduct mercury recovered from the gold mining sector is combined with the mercury from other sources at mercury processing facilities, Nevada's data alone are insufficient to quantify U.S. mercury production and shed little light on the ultimate uses of the mercury.[146]

Regarding mercury use in products and processes, there is no ongoing process for collecting data on mercury use in industrial processes.[147] IMERC collects data on mercury use in products, but as state officials acknowledge, the IMERC program is insufficient by itself for a variety of reasons, as explained further below:

> No mechanism currently exists in many states or at the federal level to identify and track products and processes that use mercury. Although several states require manufacturers of mercury-added products to report their mercury use to IMERC, many states do not participate and available information suggests incomplete or non-existent reporting in some sector categories.[148]

To be sure, IMERC has performed an invaluable service by creating and maintaining the database on mercury use in products, a database which EPA refers readers of its website to as the source of information on the amount of mercury used in switches and relays, and in products generally.[149] Nonetheless, the IMERC reporting program cannot provide the needed data on mercury production and use in products and processes. This is because the IMERC reporting program:

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[144] Wilburn, *Changing Patterns*, *supra* note 30, at 9, 12.

[145] *Id.* at 7.

[146] *Id.* at 5-7.

[147] As noted above, the Chlorine Institute historically reported on mercury use in the chlor-alkali sector, but to the best of our knowledge, these reports are no longer provided. In any case, within a short period of time, only one mercury cell plant will be operating in the United States, according to a recent press release from one of the two remaining companies using mercury in this process. *See* ASHTA Chemicals, Inc., *ASHTA Chemicals Inc. Announces Significant Capital Investment in Northeast Ohio Benefiting the Environment and Local Community* (June 25, 2014), http://www.ashtachemicals.com/Uploads/ASHTA_Press_Release%206-25-14.pdf (attached as Exhibit 63).

[148] Quicksilver Caucus Report, *supra* note 48, at 45.

[149] *See* U.S. EPA, *Mercury, Consumer and Commercial Products*, http://www.epa.gov/mercury/consumer.htm (last visited May 11, 2015) (attached as Exhibit 64) (heading "Switches and Relays").

- Does not cover mercury production or imports;
- Does not cover mercury compounds manufactured or imported for use in industrial processes;
- No longer covers most mercury uses in switches and relays; and
- Contains significant data gaps due to underreporting and non-reporting, as acknowledged above.

It is for these reasons that the Quicksilver Caucus seeks federal action to obtain the necessary data on a variety of mercury uses in products and processes. We too seek federal action, noting particularly the legislative and resource challenges states are facing to increase their mercury reporting and regulatory capabilities.[150]

The lack of ongoing IMERC coverage for switches and relays is particularly noteworthy, because it was the largest mercury-use product sector in 2010 according to IMERC, was considered a "high priority, special concern" by EPA, and is the major existing product category for which EPA needs data to meet Convention obligations. IMERC is no longer collecting most data for this sector because all of its member states ban the sales of these products, and thus these states can no longer review data on the continuing use elsewhere in the country.[151] This dynamic may extend to other product categories in the future, and is another reason the IMERC database, by itself, does not and will not provide adequate data-collection on mercury use in products nationally.[152]

As discussed above, EPA acknowledged the limitations of the IMERC reporting program in its 2006 Roadmap, identifying the need for a national mercury use database notwithstanding the IMERC data. And this was before this new and significant gap in IMERC coverage for switches and relays emerged.

Significantly, this petition for rulemaking takes full advantage of the IMERC database where that database continues to provide valid data on mercury use in products. Specifically, we have proposed that the federal reporting requirement be fully coordinated with the IMERC reporting program. Our proposal is similar to the reporting scheme Canada recently promulgated in that our proposal would time the federal reporting to coincide

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[150] *See e.g., Great Lakes Mercury in Products Phase-Down Strategy Progress Report*, *supra* note 142, at 17-18.

[151] *See IMERC Fact Sheet*, *supra* note 124, at 4. IMERC is only accepting data on a mercury use in switches and relays which is exempt from phase-out requirements in an IMERC state, due to either a statutory exemption or an administrative action.

[152] *See* Commission for Environmental Cooperation, *North American Regional Action Plan for Mercury Close-Out Report* 43 (May 2013), *available at* http://www3.cec.org/islandora/en/item/11354-north-american-regional-action-plan-mercury-close-out-report-en.pdf (attached as Exhibit 65) ("The IMERC database is the best source of current information on mercury use in products sold in the United States, but the data will gradually become less comprehensive over time as IMERC-member states ban the sale of specific products and no longer require reporting of those banned products.").

with the IMERC reporting system.[153] In addition, we propose that companies which submit reports on mercury use in products that are accepted by IMERC be considered in compliance with the federal reporting requirement with respect to the information provided to IMERC. In this way, the value of the IMERC program remains fully utilized, reporting obligations are not duplicated, and the federal reporting requirement targets the mercury production and uses IMERC is not reaching. Accordingly, for producers of mercury-added batteries, lamps, and measuring devices—products covered by this petition for which EPA indicated in its Convention ratification instrument mercury use has already achieved de minimis levels, the IMERC reporting system will suffice and no new reporting burden will be imposed on producers complying with the IMERC reporting program.

However, companies not complying with IMERC requirements, such as perhaps some product importers, will be subject to the reporting obligation and federal enforcement, thereby providing critical support for and coordination with the IMERC program. As observed by state officials, the IMERC program experiences significant non-reporting and underreporting, but to our knowledge, no state enforcement action has ever been taken against recalcitrant companies. For this reason, we do not propose to exempt outright those product categories subject to the IMERC reporting obligation. Moreover, since EPA relied upon the IMERC data as one of the principal bases for its de minimis Convention declaration,[154] EPA should cooperate with IMERC to ensure these data reflect actual mercury use, rather than non-reporting or underreporting by importers and other producers.

We file this petition under TSCA because it is the best federal vehicle for obtaining the required data on mercury production and use, and will likely be the appropriate principal vehicle for taking further regulatory actions needed to reduce mercury use in products and processes.[155] It is the only federal law that can produce quantitative and comprehensive data on mercury production and the vast majority of its uses in products and processes.[156]

For example, under the Toxic Release Inventory (TRI) program, companies must provide data on the quantity of mercury or mercury compounds entering the various environmental media onsite, and quantities transferred offsite for waste management

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[153] *See Products Containing Mercury Regulations*, *supra* note 128, at 2864-2867 (sections on Labeling, Testing and Reporting, ¶¶ 8-12).

[154] *See* United States of America Notification Under Article 4, Paragraph 2, *supra* note 122, at section 1, Part I of Annex A.

[155] *Cf.* Mercury Switches in Motor Vehicles; Significant New Use Rule, 72 Fed. Reg. 56,903; Mercury Use in Flow Meters, Natural Gas Manometers, and Pyrometers; Significant New Use Rule, 75 Fed. Reg. 42,330; Elemental Mercury Used in Barometers, Manometers, Hygrometers, and Psychrometers; Significant New Use Rule, 77 Fed. Reg. 31,728; *EPA's Roadmap for Mercury*, *supra* note 50, at 39; *Initial Risk-Based Prioritization*, *supra* note 126, at 6.

[156] We are aware that even TSCA has its limitations. *See* 15 U.S.C. § 2602(2)(B)(vi) (excluding drugs and devices otherwise covered by the Federal Food, Drug, and Cosmetic Act from coverage under TSCA).

purposes.[157] In addition, companies are asked whether they produce or import mercury, if the mercury is used for onsite use or processing, and if it is used or processed onsite, the general function of mercury in the process or use (i.e., used as a reactant, chemical processing aid, etc.). In its 2006 EPA Roadmap for Mercury, EPA used TRI data to quantify mercury discharges to water.[158]

However, under TRI, no data are requested or provided on the specific industrial process or product manufacturing involved, the quantities of mercury or mercury compounds which are produced or imported, or the quantity of mercury or mercury compounds that may be involved in the particular product or product use. It is not possible to determine this information indirectly either, since, for example, EPA (and the states) have been unable to determine the magnitude of mercury use in polyurethane manufacturing based upon the TRI database and other available information. These shortcomings are confirmed in a 2009 Report to Congress, where EPA found databases tracking trade could not be used to provide import data on mercury compounds because the data track only aggregated quantities of mercury compounds and do not track individual compounds, and the existing data were uncertain due to conflicts between existing databases.[159]

Other relevant laws are directed toward particular environmental media, or waste management. For example, EPA has used its authority under the Clean Air Act to produce a detailed inventory of mercury releases to air.[160] However, these laws and the underlying data they can generate will not provide the mercury use production and use data which can be gathered using TSCA section 8(a) authority.

Similarly, EPA's existing regulatory mechanism to collect data on mercury production under TSCA, the Chemical Data Reporting Rule (CDR Rule) (formerly known as the Inventory Update Reporting (IUR) rule), does not collect the comprehensive data on mercury and mercury-compound manufacturing, processing, and imports that EPA needs to make sound and informed mercury risk-reduction decisions.

First and foremost, the thresholds for reporting under the CDR Rule will exclude the majority of mercury producers and importers of mercury and mercury compounds: reporting is not required if a manufacturer meets the definition of "small manufacturer" or if the manufacturer produces less than 25,000 pounds (11.34 MT) of mercury per year at a single site. Most mercury producers do not exceed 25,000 pounds at a single location,

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[157] *See* 40 C.F.R. § 372.85 (toxic chemical release reporting form and instructions).

[158] *EPA's Roadmap for Mercury*, *supra* note 50, at 25-26.

[159] U.S. EPA, *Report to Congress: Potential Export of Mercury Compounds from the United States for Conversion to Elemental Mercury* 12 (Oct. 14, 2009), *available at* http://www.epa.gov/hg/pdfs/mercury-rpt-to-congress.pdf (attached as Exhibit 66).

[160] Indeed, EPA's detailed mercury air emissions inventory stands in sharp contrast to the absence of federal data on mercury production and use. *See* U.S. EPA, *2011 Facility Total Mercury*, http://www.epa.gov/ttnchie1/net/2011inventory.html (under "Maps and Fusion Tables," next to "Mercury," select "Table") (last visited May 11, 2015) (attached at Exhibit 67).

because they produce or import mercury at multiple locations and/or total domestic mercury production in the country is significantly less than 200 MT annually.[161] As we explained above,[162] these high thresholds are not appropriate for a low-volume, bio-accumulative chemical like mercury that is toxic even at very low concentrations. Indeed, for the 2012 reporting period for the CDR Rule, only two companies reported that they manufactured or imported mercury or mercury compounds.[163]

Other features of the CDR Rule also severely limit its utility for gathering comprehensive data on domestic mercury use in products and processes. The CDR Rule applies only to manufacturers (including importers) of mercury, and *not* to processors.[164] In addition, the Rule does not apply to persons who import mercury solely as part of an article, so reporting under the CDR Rule will not capture mercury-added products.[165] As we explained above,[166] mercury use as part of articles, such as switches and relays, is an important ongoing use of mercury in the United States.

Finally, the CDR Rule may not capture sufficiently detailed information to be useful for EPA's assessment of risk-reduction activities, even for those manufacturers and importers that are required to report under the Rule. Manufacturers are required to report an industrial-sector "code" that describes "the industrial activities associated with each industrial processing or use operation."[167] However, the codes, e.g., "electrical equipment, appliance, and component manufacturing," do not provide enough detail about the use of mercury for EPA to understand exactly what products or processes the mercury is being used for.

EPA's Strategy Document for mercury implicitly acknowledges that the CDR Rule and its other existing reporting mechanisms are not sufficient to gather the data necessary to make sound decisions about mercury risk-reduction activities. Despite the Agency's collection of some data under the CDR and TRI rules, EPA concluded that it needed a strategy to "provid[e] insight into the current marketplace [for mercury]" and to "update its data set of mercury quantities used in products and processes."[168]

We recognize that EPA expressed an initial preference for obtaining the necessary information voluntarily. This voluntary approach is inadequate for a variety of reasons.

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[161] *See* U.S. EPA, *Background Paper for Stakeholder Panel to Address Options for Managing U.S. Non-Federal Supplies of Commodity-Grade Mercury* (Mar. 14, 2007), *available at* http://www.epa.gov/earlink1/mercury/archive/stocks/backgroundpaper.pdf (attached at Exhibit 68) (excluding mercury from decommissioning chlor-alkali plants because all but two have already closed or converted).

[162] *See supra* pp. 7-8.

[163] *See* U.S. EPA, *Chemical Data Access Tool (CDAT)*, http://java.epa.gov/oppt_chemical_search/ (last updated July 23, 2014) (search "mercury") (attached as Exhibit 69).

[164] *See* 40 C.F.R. § 711.8.

[165] *See id.* § 711.10(b).

[166] *See supra* p. 6.

[167] *Id.* § 711.15(b)(4)(i)(B).

[168] EPA Strategy Document, *supra* note 21, at 1.

First, as we understand it, EPA's outreach to collect the data voluntarily initially targeted just nine domestic mercury producers, to avoid triggering obligations under the Paperwork Reduction Act. EPA anticipated that some producers would provide data on the quantities of mercury they produce and companies buying the mercury from them.

However, this approach will not reach importers of either mercury-added products or mercury compounds destined for use in industrial processes (such as mercury catalysts used in polyurethane manufacturing), since it is extremely unlikely that EPA could accurately target or otherwise limit its inquiries to just nine potential importers.[169] Moreover, not every domestic mercury producer was contacted by EPA, since there were more than nine potential producers initially identified.

Similarly, tracking the mercury to end users will surely involve more than nine companies, and thus EPA will face inevitable choices regarding which company data to pursue under the "maximum of nine" limitation.[170] By its very nature, the data collected will be significantly incomplete at best. And unless EPA repeatedly initiates the voluntary data request (which the companies may then reject), the Agency will at best obtain a one-time snapshot view of mercury production and flows. Such information would not be sufficient to allow the Agency to track progress over time, identify new uses, or satisfy ongoing Convention obligations.

Last but not least, the voluntary approach has not worked thus far,[171] and there is no reasonable basis for believing it ever will given the USGS prior experience. Therefore, both in design and implementation, EPA's voluntary effort has not produced and is not likely to produce the comprehensive, reliable data set necessary to inform further risk-reduction activities. Accordingly, the need for and the utility of a rulemaking that would require mandatory reporting from all mercury, mercury-compound, and mercury-mixture manufacturers and processors has been demonstrated.

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[169] EPA indicates in its Strategy that it will use information from international organizations such as the Global Mercury Partnership to enhance data on mercury-added product and mercury-compound imports, but since most of the relevant trade transactions are not publicly reported, these international organizations will face the same challenges as EPA. *See e.g.*, United Nations Envt. Programme, *Summary of Supply, Trade & Demand Information on Mercury*, *supra* note 29, at 5-6 (most transactions involving mercury compounds are not publicly reported, there are far fewer details regarding mercury end uses in many nations). Indeed, many trade reporting categories for products and chemical compounds do not differentiate those containing mercury, and thus cannot be used to determine quantities of mercury involved.

[170] For example, there are more than nine companies which historically reported to IMERC that they produced mercury switches and relays, for just that one mercury-use product category. *See* NEWMOA, *Mercury-Added Products Database*, https://imerc.newmoa.org/publicsearch/NEWMOA_IMERC.aspx (last visited Feb. 24, 2015) (under "Browse by Product Category," the database lists 29 companies that have historically manufactured switches or components used in switches, and 12 companies that have historically manufactured relays or components used in relays) (attached as Exhibit 70).

[171] *See* U.S. EPA, *Subpoena and Information Request* (Mar. 20, 2015), *available at* http://www.epa.gov/mercury/pdfs/Hg_Formal%20Request_SIGNED_03-20-2015.pdf (attached as Exhibit 71).

VIII. Conclusion

For the foregoing reasons, Petitioners request that EPA promulgate a TSCA section 8(a) reporting rule that will capture comprehensive national data about ongoing mercury uses in products and processes. Such information is necessary to inform further risk-reduction activities to reduce unreasonable risks to health and the environment from mercury exposure: EPA cannot make informed, sound decisions about how to further reduce risks from mercury exposure without this comprehensive national data.

Petitioners reserve the right to supplement this petition based on new information.

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