2020 Report from the United States of America in Response to Paragraph 9 of Decision MC-3/1

Information on Domestic Measures and Strategies Implemented to Address Mercury-Added Products and Quantifications of Reductions Achieved

Article 4, paragraph 2, of the Minamata Convention on Mercury (the Convention) permits a Party to indicate at the time of ratification or upon entry into force of an amendment to Annex A for it, that it will implement different measures or strategies to address products listed in Part I of Annex A, as an alternative to Article 4, paragraph 1. The same provision states that "No later than five years after the date of entry into force of the Convention, the Conference of the Parties shall, as part of the review process under paragraph 8, review the progress and the effectiveness of the measures taken under this paragraph." Below please find the contribution of the United States towards the requisite information for the aforementioned review process, as requested in paragraph 9 of Decision MC-3/1.

Consistent with Article 4, paragraph 2, of the Convention, the United States indicated at the time it joined the Convention that it would implement different measures or strategies to address products listed in Part I of Annex A. The United States also demonstrated at that time, consistent with Article 4, paragraph 2, of the Convention, that it had already reduced to a *de minimis* level the manufacture, import, and export of a large majority of the products listed in Part I of Annex A, and that it had implemented measures and strategies to reduce the use of mercury in additional products not listed in Part I of Annex A. Such information was presented by the United States in a notification submitted at the time of its acceptance of the Convention in October of 2013 (2013 notification), which can be found at:
http://www.mercuryconvention.org/Countries/Parties/Notifications/tabid/3826/language/en-US/Default.aspx.

Through a multifaceted approach, including national and sub-national legislation, regulation, and public-private partnerships, the United States dramatically reduced use of mercury in products by over 97% between 1980 and 2007, and the projected demand for and use of mercury in products remains in decline within the United States. As a result of the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amended the earlier Toxic Substances Control Act, the U.S. Environmental Protection Agency (EPA) is now required to collect information directly from producers, users, and importers of mercury and mercury products in order to publish a mercury inventory every three years (see 15 U.S.C. 2607(b)(10)). EPA published its initial mercury inventory in 2017 using only information that was publicly available at that time. The first inventory report using the information received directly from producers, users, and importers of mercury and mercury products (as required by the federal mercury inventory reporting rule (see 40 CFR Part 713)) was published in March of 2020 (see

https://www.epa.gov/sites/production/files/2020-03/documents/10006-34_mercury_inventory_report.pdf).

The United States is therefore now able to use data reported under the mercury inventory reporting rule and EPA's national mercury inventory to identify key data points related to the production, use, import, and export of mercury and mercury-added products.

At the time of the U.S. acceptance of the Minamata Convention in 2013, the United States compared data for the use of mercury in Annex A products for the years 2001 to 2007 (data from the 1980 estimate was not able to be broken down among the Annex A products). With the data collected via the 2018 national mercury inventory reporting rule, the United States is able to compare data for the years 2001 to 2018.

The initial comparisons compared U.S. and global content and consumption estimates among itemized Annex A categories. Given that the United States demonstrated in its 2013 submission that it had met the Article 4(2) *de minimis* standard for all products listed in Annex A, Part I, with the exception of switches and relays, and that U.S. data from its 2020 mercury inventory report continue to show consistent, overall declines in domestic content and consumption of mercury in mercury-added products, the comparisons below are presented for U.S. totals only and in the overarching Annex A product categories (e.g., lamps, measuring devices). Measures to reduce mercury use in switches and relays are addressed further below.

Estimated mercury content/consumption by product category

Electrical/Electronic Equipment (i.e., Switches/Relays)		
2001	67.8 metric tons	
2007	30.5 metric tons	(Δ 2001-2007: -55%)
2018	4.0 metric tons	(Δ 2001-2018: -94%); (Δ 2007-2018: -87%)
Lamps		
2001	9.7 metric tons	
2007	9.7 metric tons	(Δ 2001-2007: 0%)
2018	1.8 metric tons	(Δ 2001-2018: -81%); (Δ 2007-2018: -81%)
Batteries		
2001	2.5 metric tons	
2007	1.9 metric tons	(Δ 2001-2007: -24%)
2018	<0.1 metric tons	(Δ 2001-2018: -96%); (Δ 2007-2018: -95%)
Measuring Devices		
2001	4.6 metric tons	
2007	1.0 metric tons	(Δ 2001-2007: -78%)

2018	0.3 metric tons	(Δ 2001-2018: -94%); (Δ 2007-2018: -70%)
Dental Amalgam		
2001	27.9 metric tons	
2007	18.1 metric tons	(Δ 2001-2007: -35%)
2018	4.2 metric tons	(Δ 2001-2018: -85%); (Δ 2007-2018: -77%)

For the Annex A categories of cosmetics and pesticides, biocides, and topical antiseptics, EPA's 2020 national mercury inventory (based on 2018 data) reported no manufacturing, import, or export for those product categories.

In accordance with the obligation under paragraph 2(a) of Article 4 to report to the Conference of the Parties at its first opportunity a description of the measures or strategies implemented, including a quantification of the reductions achieved, the United States provided significant detail with respect to such measures, strategies, and quantifications that address mercury-added products – both for those products listed in the Convention and additional products not listed in the Convention – in its 2013 notification. Because many of the statutes and regulations listed in that notification remain in force, the United States incorporates that notification by reference into the present report, as applicable to Annex A products (e.g., automobile switches, barometers, manometers, hygrometers, lamps, and batteries), as well as other mercury-added products (e.g., flow meters, pyrometers, toys, and children's jewelry). The additional measures and strategies below, which reflect data and quantifications in the 2020 mercury inventory, highlight further significant actions taken, but are illustrative, and not necessarily comprehensive, in nature.

In June 2017, EPA also promulgated technology-based pretreatment standards to reduce discharges of mercury from dental offices into publicly owned treatment works (POTWs). (Dental offices discharge mercury present in amalgam used for fillings. Amalgam separators are a practical, affordable, and readily available technology for capturing mercury and other metals before they are discharged into sewers that drain to POTWs. Once captured by a separator, mercury can be recycled.) The Dental Office Category regulation, codified at 40 CFR Part 441, requires dental offices to comply with requirements based on practices recommended by the American Dental Association, including the use of amalgam separators. EPA expects compliance with this final rule will annually reduce the discharge of mercury by 5.1 tons as well as 5.3 tons of other metals found in waste dental amalgam to POTWs.

In addition, EPA has implemented the following measures and strategies:

- September 2014: Published the EPA Strategy to Address Mercury-Containing Products, which was intended to: (1) provide a better understanding of the continuing uses of mercury in such products and processes; and (2) assist the United States to implement obligations under the Minamata Convention (https://www.epa.gov/mercury/epa-strategy-address-mercury-containing-products-2014).

- March 2015: Issuance of subpoenas to primary U.S. recyclers/retorters of elemental mercury to obtain information on manufacture, import, export, and other trade data.
- August 2016: Publication of a list of five mercury compounds that are prohibited from export effective January 1, 2020 (81 Fed. Reg. 58926, August 26, 2016; see also 15 U.S.C. 2611(c)(7)).
- March 2017: Publication of the initial inventory report of mercury supply, use, and trade in the United States (https://www.regulations.gov/document?D=EPA-HQ-OPPT-2017-0127-0002; see also 82 Fed. Reg. 15522, March 29, 2017.)
- June 2018: Publication of the mercury inventory reporting rule, which established the reporting requirements that supports the 2020 and subsequent, triennial inventories (83 Fed. Reg. 30054, June 27, 2018; see also 40 CFR Part 713).
- March 2020: Publication of the inventory of supply, use, and trade of mercury in the United States (https://www.epa.gov/mercury/2020-mercury-inventory-report; see also 85 Fed. Reg. 18574, April 2, 2020).

To accompany these efforts, EPA created and issued outreach materials (https://www.epa.gov/mercury/resources-mercury-inventory-reporting-rule), including a compliance guide for the mercury inventory reporting rule, and webinars to explain the reporting requirements and how to use its electronic reporting application. The compliance guide is available at:
https://www.epa.gov/sites/production/files/2019-05/documents/reporting_requirements_for_the_mercury_inventory_final.pdf
The corresponding webinars can be found at:
https://www.epa.gov/mercury/webinars-mercury-inventory-reporting-rule-0.

While these materials were designed to foster the implementation of reporting for the national mercury inventory, the topics covered included background information on mercury-added products and manufacturing processes, as well as the regulatory and market history of mercury manufacture, import, and export in the United States.

This information will also be provided by the United States at the first full reporting period of the Convention.

The United States indicated in its 2013 notification that although significant domestic reductions had been made, switches and relays was the only product category of the nine listed in Part I of Annex A of the Convention for which there were insufficient data available to fully assess whether U.S. manufacture, import, and export was or was not *de minimis*. The United States was not able at that time to separate out data on switches and relays that are covered under Annex A from data on switches and relays that are excluded from the scope of Annex A, such as products for use in refurbishment and replacement parts. As the United States moves ahead with clarifying national mercury inventory data reported

in 2018 for switches and relays, such details will be provided to the Secretariat at the earliest opportunity.

Domestically, specific measures and strategies to address switches and relays have been put in place, such as the National Vehicle Mercury Switch Recovery Program (NVMSRP), a collaboration for reducing mercury air emissions initially designed by EPA and industry stakeholders in 2006. Most recently, a memorandum of understanding (MOU) was renewed on November 15, 2018 between EPA and 44 signatories, including the Steel Manufacturers Association, the American Iron and Steel Institute, the End of Life Vehicle Solutions Corporation, the Automotive Recyclers Association, and the Institute of Scrap Recycling Industries. Involving more than 10,000 recyclers, the NVMSRP has removed and safely recycled more than 6.8 million mercury switches, containing a total of more than 7.6 tons of mercury. By diverting the switches from the waste stream, the program also has prevented the release of mercury into the atmosphere. The program was set to expire in 2017; however, given its effectiveness, EPA and its partners extended it to 2021.

In addition, the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act required the publication of an initial national mercury inventory in 2017, which resulted in better data from and outreach to mercury switch manufactures and importers in its 2020 iteration. As shown in the data comparisons above, there has been a consistent decline in the amount of mercury used for electronic/electrical equipment (i.e., switches and relays) in the United States. At this time, the United States is conducting additional outreach to several manufacturers of mercury-added switches and relays, as well as for dental amalgam and a few other products, to ensure that totals reported for 2018 are accurate. Reported totals will be updated as appropriate. The United States views such interactions with industry as part of its ongoing efforts not only to better understand where mercury is still used to manufacture certain switches and relays, but also to encourage the development of effective alternatives.

In addition to the measures described above, the United States continues to consider additional measures to achieve further reductions, pursuant to Article 4, paragraph 2(c). As noted in its 2020 mercury inventory report, EPA was required to identify products and manufacturing processes that intentionally add mercury and make recommendations for actions to further reduce mercury use. In the report, EPA listed numerous products and manufacturing processes commonly known to coincide with Annex A product categories (e.g., batteries, lighting, measuring devices). In addition, the Agency identified several other products and manufacturing processes. Those uses include (as described by terms reporters used in submission to the mercury inventory):

<u>Products</u>

- The “burners” aspect of “low UV gas discharge lamps and burners”
- Wheel emblem
- Lead in water sensor
- Mercury analyzer
- Air cylinders

- Connector pins
- Mass flow controllers
- Printed circuit board
- Motors

Manufacturing Processes

- Bonding weld head (catalyst)
- Molecular beam epitaxy
- Quality analysis (density measurement of tungsten bars)
- Inactivation
- Quality control test (small arms ammunition case-mercury stress crack)

(See Inventory of Mercury Supply, Use, and Trade in the United States – 2020 Report: Conclusion and Data Interpretation, Identified Manufacturing Processes and Products; available at https://www.epa.gov/sites/production/files/2020-03/documents/10006-34_mercury_inventory_report.pdf)

EPA will carefully consider the reporting results in light of such factors as quantities of use and availability of safer, cost-effective alternatives and, at a future time, may recommend legal or regulatory actions, as appropriate and in accordance with the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act, to complement the implementation of U.S. obligations under the Minamata Convention. For example, the mercury inventory reporting rule creates a legally enforceable reporting obligation. While that enforcement mechanism, should it be warranted, would not directly lead to a reduction in the use of mercury in products or manufacturing processes, it could be part of the multifaceted U.S. approach to better understand the manufacture, import, and export of mercury-added products and effectuate measures and strategies to achieve such reductions. Such measures and strategies could include regulatory and voluntary approaches, as well actions to enhance the administration of the mercury inventory and its electronic reporting application.

Consistent with Article 4, paragraph 2(d), the United States has not claimed, and does not intend to claim, any exemptions pursuant to Article 6 for any product category for which the Article 4, paragraph 2, alternative was chosen.

The United States stands ready to assist as appropriate in the review of Annex A by the Conference of the Parties.