

Draft report of the group of technical experts on mercury releases

Comments on this draft should be sent to mea-minamatasecretariat@un.org by Friday 23 July 2021

Background

The Conference of the Parties, in its decision MC-2/3, established a group of technical experts to develop draft guidance on methodologies for the preparation of inventories for a list of potentially relevant point source categories of mercury release to land and water.

The Conference at its third meeting in November 2019 considered the report from the group, and in its decision MC-3/4 requested the group to continue to work and to produce a report including:

- Draft guidance on the methodology for preparing inventories of releases;
- Proposed categories of point sources of releases; and
- A road map for the development of guidance on best available techniques and best environmental practices (BAT/BEP).

In the same decision, the Conference requested the group to base its work on the following considerations:

- a) The proposed categories should not include potentially significant relevant point sources for which releases are addressed in other provisions of the Minamata Convention on Mercury, irrespective of whether those other provisions include an inventory obligation;
- b) Given that article 9 of the Convention concerns relevant point sources, diffuse sources should not be included in the proposed categories. The categories identified in the guidance should also be limited to those source categories for which mercury releases have been documented;
- c) The obligation to ensure the environmentally sound management of waste set out under the Convention addresses significant releases to land and water;
- d) While wastewater is addressed under article 9, Parties may additionally control wastewater under article 11 of the Convention;
- e) Subject to the completion of the work outlined above, and with a view to helping Parties that wish to widen the scope of the inventory referred to in paragraph 6 of article 9 to additional point sources other than those covered by article 9, the guidance on the methodology for preparing inventories of releases should also provide information on significant point sources of releases covered by other provisions of the Convention.

Relationship between Articles 9 and other articles

The group of experts on mercury releases considered the relationship between Article 9 and other articles in the context of considering whether certain releases are addressed in those other articles and therefore are not subject to Article 9.

The objective of the Convention is to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. Articles 3 to 12 cover the life cycle of mercury and mercury compounds to accomplish this objective.

Article 9 defines "releases" to mean releases of mercury or mercury compounds to land or water. Relevant source means any significant anthropogenic point source of releases as identified by a Party that is not addressed in other provisions of the Convention. Accordingly, in identifying relevant point sources, it is for a Party to determine what releases are significant for it and which are point sources within its territory, noting that some sources are addressed in other Articles of the Convention.

For the purpose of identifying potentially relevant point source categories, the expert group noted the following:

- Discharges of wastewater to a waterbody are candidate releases under Article 9, whether discharged directly to the waterbody or indirectly through an off-site wastewater treatment plant or to a common discharge pipe.
- The deposit of mercury or mercury compounds into controlled containment areas, such as impoundments or piles, are not regarded as releases under Article 9, although releases to the environment can occur from containment areas through intentional controlled discharges¹. Releases from containment areas could be potentially relevant point source releases subject to article 9.

“Mercury wastes” are defined as substances or objects consisting of, containing or contaminated with mercury or mercury compounds in a quantity above the thresholds defined by the Conference of the Parties, that are disposed of or are intended or required to be disposed of by the provisions of national law. The definition of “mercury wastes” states that overburden, waste rock and tailings (except from primary mercury mining) are not mercury wastes unless they contain mercury or mercury compounds above thresholds defined by the Conference of the Parties.

Article 11 provides that Parties shall take appropriate measures to ensure that mercury waste is managed in an environmentally sound manner, taking into account the guidelines developed under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Article 11 thereby addresses releases of mercury to land and water that arise from the generation and management of mercury waste from a broad range of facilities and activities.

Some experts believe that wastes which are not mercury wastes as defined under Article 11 cannot be considered “addressed” because they fall outside Convention coverage, and therefore the control measures of Article 11 or other provisions of the Convention do not apply. Such wastes include:

- Overburden, waste rock, and tailings from mining other than primary mercury mining, until the Conference of the Parties establishes thresholds for these wastes,
- Tailings from mining other than primary mercury mining under the thresholds to be established by the Conference of the Parties, and
- Waste contaminated with mercury (e.g. ashes, slag and air pollution control sludges) under the threshold to be established by the Conference of the Parties.

Other experts believe that the risks posed by mining overburden and waste rock have been considered, because the Conference of the Parties determined in its decision MC-3/5 that it is not necessary to establish thresholds for waste rock and overburden at this time, because they pose minimal risks. Thus, these wastes and the risks they pose, having been considered and a decision made by the Conference of the Parties about the need for controls, have been addressed under Article 11. Additionally, some experts have highlighted that waste rock and overburden are not point sources and therefore would not be considered releases under Article 9. Further, some experts were of the view that tailings (except from primary mercury mining) are also addressed by article 11 even if they contain mercury or mercury compounds below the thresholds.

Development of thresholds for tailings from mining other than primary mercury mining is an active discussion by the Article 11 waste expert group, with recommendations anticipated for consideration at the next Conference of the Parties.

The expert group could not reach an agreement on whether wastes which are not mercury wastes as defined under Article 11 may be relevant point sources under Article 9. Thus Table 1 of Annex XX presents two possible considerations by Parties in identifying relevant point sources of release.

¹ Containment failures could lead to mercury release to the environment, although such release may be regarded as a diffuse source.

Draft inventory guidance

The draft guidance on the methodology for preparing inventories of releases, which includes a list of potentially relevant point source categories, is set out as Annex XX.

Draft road map for the development of BAT/BEP guidance

The draft road map for the development of guidance on BAT/BEP is set out as Annex YY.

Annex XX

Draft Guidance on the methodology for preparing inventories of releases pursuant to Article 9 of the Minamata Convention on Mercury

Background

The present document provides guidance on the methodology for preparing inventories of mercury releases to land and water. This guidance is intended to provide general advice to Parties in non-prescriptive language, taking into account the variety of national considerations, including socioeconomic circumstances of Parties.

Article 9 of the Minamata Convention on Mercury covers releases of mercury and mercury compounds to land and water from “relevant sources”. Paragraph 6 of Article 9 requires that “[e]ach Party shall establish, as soon as practicable and no later than five years after the date of entry into force of the Convention for it, and maintain thereafter, an inventory of releases from relevant sources”.

A “relevant source” means any significant anthropogenic point source of release as identified by a Party that is not addressed in other provisions of the Convention. Paragraph 3 of Article 9 provides that each Party shall, no later than three years after the date of entry into force of the Convention for it and on a regular basis thereafter, identify the relevant point source categories. The table in the appendix lists potentially relevant categories of point sources of mercury release to assist Parties in identifying relevant point source categories within their territories.

Paragraph 7 of Article 9 provides that the Conference of the Parties shall, as soon as practicable, adopt guidance on the methodology for preparing inventories of releases and for best available techniques and best environmental practices (BAT/BEP) that may be applicable to Article 9 releases.

Many countries, as part of their preparation for becoming a Party to the Convention and for its early implementation, may have developed a national mercury profile, including identification of significant sources of emissions and releases, as well as national inventories of mercury and mercury compounds. Parties may also prepare inventories under other articles of the Convention, such as Article 8 (a mandatory inventory of emissions), Article 18 (pollutant releases and transfer registers, PRTR) and Article 19 (inventories of use, consumption, emissions and releases). These may involve processes distinct from those used for the inventory required under Article 9, but a Party may choose to use the same methodology or similar methodologies for all inventories to enhance consistency and synergies.

A robust inventory will support Parties in their domestic implementation of the Convention, such as the development of a national plan setting out targets, goals and outcomes, establishment of limit values, use of BAT/BEP, and multi-pollutant control strategies. It will also enable them to demonstrate the extent to which implementation is achieving the objective of the Convention, and to report on the effectiveness of the implementation measures pursuant to Article 21 (reporting). It will furthermore contribute to Article 22 (effectiveness evaluation) by providing comparable data on releases of mercury. The benefit of a robust inventory is not limited to the implementation of the Minamata Convention but can extend to the Sustainable Development Goals and other global, regional and national policies.

For the purposes of completeness, to the extent possible, Parties could include in their inventory information about releases from all point sources within the categories identified pursuant to paragraph 3 of Article 9. This could be particularly useful to Parties to identify which specific point sources would be significant in their territory and be addressed as relevant sources to control releases.

Use of existing inventory

Paragraph 2 of Article 18 provides that each Party shall use existing mechanisms or give consideration to the development of mechanisms, such as PRTR where applicable, for the

collection and dissemination of information on estimates of its annual quantities of mercury and mercury compounds that are emitted, released or disposed of through human activities.² Currently, almost half the Parties to the Convention have existing PRTRs or are developing new PRTR systems or have expressed interested in doing so.³ Where a PRTR program does not exist, an alternative approach is to use the UNEP Mercury Inventory Toolkit. Where a Party has established a PRTR, data about point sources of mercury releases – including from sources identified as relevant by the Party – are likely to be included. The search function of the PRTR should make it possible to identify and easily obtain data about point source mercury releases.

Steps to establish a releases inventory

In case a Party has not established a PRTR, or decides to establish a releases inventory separate from or complementing an existing PRTR, the basic methodology to establish a releases inventory typically involves many or all of the following steps:

- Plan the approach for development of the releases inventory, within available resources, and consider how to collect, handle and review data, including any quality control and quality assurance processes
- Collect existing releases data as a useful starting point
- Identify relevant sources within each source category
- Establish facility-based releases reporting requirements
- Collect the releases reports from facilities on a periodic basis (e.g., annually)
- Develop a database to store the reported releases data
- Complete relevant quality control and quality assurance processes

² An initial source identification may be obtained with minimal efforts by using the UNEP Toolkit for Identification and Quantification of Mercury Releases, available at: <https://www.unenvironment.org/explore-topics/chemicals-waste/what-we-do/mercury/mercury-inventory-toolkit>

There is a wealth of experience available from countries and from international bodies and organizations, such as OECD, UNECE, UNEP and UNITAR, that are active in the development of PRTRs. See e.g. [the note on Technical assistance and resources](#). In addition, the ECLAC Escazu Agreement, a Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean which will enter into force on 22 April 2021, covers the establishment of PRTRs in its Art. 6(4); see <https://www.cepal.org/en/escazuagreement>.

More information on the establishment and implementation of PRTRs may be found at the website [PRTR.net](#), which has been developed and is maintained by the Organization for Economic Cooperation and Development (OECD), in cooperation with the United Nations Economic Commission for Europe (UNECE).

Other useful resources include:

- Inter-Organization Programme for the Sound Management of Chemicals (IOMC) [Toolbox](#)
- Detailed [guidance](#) developed by OECD
- [Guidance](#) on the Implementation of the UNECE Protocol on PRTRs.

UNITAR also makes available a number of [resources](#) that facilitated countries' implementation of PRTR systems, such as links to international guidelines, factsheets, videos, a network of international experts and [e-learning opportunities](#).

It should be noted that the PRTRs may have thresholds for reporting, under which facilities emitting less than the threshold have no obligation to report. A Party may consider using thresholds for mercury that are low enough to capture relevant sources. A Party may also complement the reported release amount of mercury with estimates of releases from smaller sources.

PRTR and its related legislation cover multiple pollutants and source categories. They regulate reporting requirements for the facilities including the reporting cycle, data collection and record keeping, quality assessment by the competent authority, and the dissemination of information to the public and other stakeholders

³ A map of countries with PRTR activities is available at <https://unece.org/sites/default/files/2021-01/4%28a%29%20ICG%208thWGPP.pdf>, page 3. According to OECD, in 2016, 75 countries were working on PRTRs. See progress of PRTR and OECD activities available at https://unece.org/sites/default/files/2020-12/4%28a%29%20OECD%20activity%20on%20PRTR_0.pdf, page 3.

- Facilitate analysis of the results
- Make the data publicly accessible and searchable.

Once it has been established, arrangements must be made to maintain and update the inventory, in line with Paragraph 6 of Article 9.

The following sections provide guidance for Parties on some of these steps.

Initial steps: identifying the relevant point source categories and facilities

In preparing to implement the Minamata Convention, a Party will develop a plan on how to develop the inventory, including how to collect, review and validate data. An initial step for the Party may then be to identify the sources of mercury releases present within its territory, and also to identify and collect any existing inventories.

In doing so, a Party ought to identify the relevant point source categories pursuant to Paragraph 3 of Article 9. A relevant source is defined as any significant anthropogenic point source of release as identified by a Party that is not addressed in other provisions of the Convention. The table in the appendix lists potentially relevant categories of point sources to assist Parties in identifying relevant point source categories. Parties are to determine which anthropogenic point sources of releases to land or water within their territory are significant. In doing so, they may take into account the quantity of the releases, their location, the environmental conditions, exposure pathways and other factors of national concern.

After identifying relevant point source categories, a Party will need to identify the facilities within each of the point source categories present at the national level: once again, existing inventories may already have much of this information. This would be followed by the development of a quantitative inventory by collecting information from facilities considered to be a relevant source within the source category.

Collection of releases information from individual facilities

A Party will need to collect recorded or estimated data about the point source releases from individual facilities covered by Article 9 over a defined time period. This may be done under PRTR legislation, using licensing conditions associated with the relevant source category, or statistical surveys. Typically, inventories are based on a calendar year, so releases are calculated on an annual basis. Developing countries may start with a broader time interval. The inventory under Article 9 is required within five years of the entry into force of the Convention for that Party. The collection of data earlier than this date, however, would contribute to robust estimates.

The inventory should ideally be based on the direct measurement of point source releases⁴, where it is possible to measure representative release levels and also where supporting information is available on the frequency and duration of mercury releases. This will produce the most robust estimates. In such cases, samples should be taken at conditions representative of normal facility operations. If the releases are highly variable, or releases are from a batch process, longer sample duration should be used or more samples collected.

In practice, it may not always be possible to obtain measured data from facilities. In that case, methodologies exist for engineering estimates or mass balance calculations, and estimating releases through the use of release factors, as in the UNEP Inventory Toolkit.

A release factor is a representative value relating the quantity of mercury released to the activity level associated with the source (for example, the throughput of raw material). Other indirect measuring techniques, such as engineering estimates or mass balance calculations can also be used in the absence of direct measurement.

⁴ Guidance on analytical measurements includes:

- ISO 12846:2012 Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment;
- ISO 17852:2006 Water quality — Determination of mercury — Method using atomic fluorescence spectrometry; and
- USEPA Method 105 - Mercury in Wastewater Treatment Plant Sewage Sludge

A Party could choose also to use a combination of approaches. Estimates using release factors may provide a better estimate of emissions for a category of sources rather than for any individual sources. It may be particularly useful for example to use aggregated releases for sources which are too numerous or costly to monitor individually, or where individual reporting would be too burdensome. The methodology may differ from one source category to another, and could even be different for different types of facilities within a source category.

There are advantages in progressively adopting new and more accurate methods, for example, replacing data based on estimation techniques with actual monitored data as they become available, or replacing generic release factors with factors which are more representative of the circumstances in the Party's territory or at a specific source. At the same time, however, maintaining comparability between data obtained over time, so that trends in controlling releases are clear, is also necessary for the purposes of tracking progress in reducing releases.

A Party may wish to establish policies and procedures about how methodological changes are introduced and how frequently this is done, and have arrangements in place where possible to help identify which changes over time are the result of real changes in releases and those which reflect improvements in estimating techniques.

Where no national approaches are in place, a Party may find it useful to adopt the methodologies set out in international guidance, such as the UNEP Toolkit⁵. When a Party lacks national release factors, internationally accepted values are suggested to be used.

In practice, the decision on the methodology to be used should be based on a combination of factors and may change over time, reflecting what is practical and affordable and what is most suitable in the light of national circumstances. At a minimum, however, there should be transparency about the methodology being used, so that the information in the inventory can be correctly interpreted.

Where the information can practicably be obtained, it is useful to record details of the speciation of the releases – that is, whether the released substance is elemental mercury, an inorganic mercury compound or an organic mercury compound. This information may be useful in predicting the fate of mercury and mercury compounds in the aqueous and terrestrial environment and their risk to human health and the environment, as well as identifying effective control strategies and technologies.

Where the information can practicably be obtained, it is also useful to record details of other pollutants released together with mercury (that together acts as a "finger-print" of the specific release source). This information may be useful in tracking and identifying sources of mercury observed / monitored in the aqueous and terrestrial environment, and direct abatement measures to the right release sources.

Once the national methodologies have been established, Parties should provide specific guidance to facilities on the estimation methods to be used, quality control and quality assurance considerations, and the format for data submission. National authorities should also apply quality control/validation techniques to the data to ensure that it is robust and reliable. Where a PRTR system exists, this is usually a part of its reporting.

Development of a reporting and data management system

To facilitate reporting, a Party could set up a dedicated releases inventory website to disseminate information, thus enabling industries to download the relevant guidance materials, including reporting templates. Industries should be encouraged to submit their reports in an electronic format, to allow for easier data handling and analysis. A Party should require facilities to meet fixed reporting requirements and timelines.

A Party should create internal databases to store facility information (such as the facility's name, location, corporate ownership and other details) and the reported releases data. This database should be searchable, easy to use and conducive to further data analysis.

⁵ [UNEP Toolkit](#) for Identification and Quantification of Mercury Releases

Making the data publicly accessible and searchable

Individual facility releases data and releases summary reports containing non-confidential information, as well as the methodologies or monitoring methods used, should be made available to the public, consistent with the Party's obligation under Article 18 (Public information, awareness and education). If a Party has set up a website to assist industries in reporting their releases, the same website could be used to disseminate the releases data, subject to suitable security arrangements to protect the data. The website should allow users to conduct customized data searches, such as for an individual facility, industrial sector, geographical region, or a specific reporting year.

UNEP Inventory Toolkit

UNEP has developed a set of tools, consistent with the above methodology, for use in establishing inventories. This UNEP toolkit is a good starting point for Parties developing their own release inventories. The toolkit potentially covers all sources of mercury emissions and releases to all environmental media, and therefore is not intended only for Article 9 inventories. However, it can also be used to establish more limited inventories covering the point source release to land and water from relevant sources under Article 9 as identified by the Party. Over time, a Party should strive to improve and develop their releases inventories, and the guidance outlined above provides a basis for such an undertaking.

The toolkit is available at two levels: inventory level 1 and inventory level 2.

Inventory level 1 uses factors derived from experience for input and releases to calculate mercury inputs and releases to all environmental media, and presents results as estimates.

Inventory level 2 aims to lead countries through the process of enhancing and refining their initial inventories. It provides guidance on the different techniques and stages of developing the inventory, and includes illustrative examples and extensive information on mercury release sources. It provides a simple methodology, together with an accompanying database to ensure consistency in the development of national inventories. Inventory level 2 encourages the use of country-specific calculation factors, and using such factors, the emission and release estimates developed on Inventory level 2 can be refined to a higher level of precision, provided the needed data are available in the country.

The methodology for level 2 aims for the identification and quantification (where possible) of all sources of emissions and releases of mercury at the national level. The first step is the establishment of a screening matrix, with an identification of the main source categories present. A Party could choose to limit the sources to those relevant source categories identified by the Party. The second step is the classification of the main source categories into subcategories, to identify individual activities that potentially release mercury. This produces a qualitative identification of source types. The third step involves the development of a quantitative inventory. For a detailed quantitative inventory, activity volume data and process-specific information are gathered and may then be used to calculate estimated mercury releases from the identified sources. The toolkit contains procedures and equations for the calculation of all emissions and releases. Whenever reported releases are based on calculations or other estimation methods, confirmatory testing of releases from facilities identified by the inventory should be conducted, with the goal of creating a census of facilities in the different point-source categories, and measured releases of mercury from each facility.

As a final stage, the results of the inventory are compiled. The toolkit recommends the use of a standardized presentation format, which ensures that all known sources are considered (whether they are quantified or not). This allows any data gaps to be revealed, and assists in ensuring that inventories are comparable and transparent. It also provides an opportunity to review, over time, changes in the national emissions and releases of mercury from all sources. This quantitative review conducted under level 2 would contribute to reporting requirements under paragraph 8 of Article 9.

Appendix 1: List of potentially relevant point source categories

Table 1 lists potentially relevant categories of point sources to assist Parties in identifying relevant point source categories pursuant to Paragraph 3 of Article 9. The table indicates information sources where releases of mercury to land and water from the listed source categories have been documented. Since Parties are to determine whether a source of releases to land or water within their territory is “significant” or not, some of the sources below may not be considered significant in all cases (e.g., the releases may be low in terms of quantity).

The Conference of the Parties in its Decision MC-3/4 requested the group of experts to provide information on significant point sources of releases covered by provisions of the Convention other than Article 9, with a view to helping Parties that wish to widen the scope of the inventory to additional point sources, subject to the completion of other work. Table 2 lists such point sources that were considered by the group of experts when developing Table 1. It should be noted that Table 2 is only indicative and has not undergone an extensive review.

Table 1: List of potentially relevant point source categories

Source category in the mercury inventory toolkit		Release sources	Documented releases
Source category: Extraction and use of fuels/energy sources			
5.1.1	Coal combustion in power plants	Wastewaters and non-wastewater releases not addressed under another article of the Convention from coal storage, coal washing and air pollution control systems.	Global Mercury Assessment 2018, UNEP Inventory Toolkit Reference Report
5.1.2.1	Coal combustion in coal-fired industrial boilers	Wastewaters and non-wastewater releases not addressed under another article of the Convention from coal storage, coal washing and air pollution control systems.	Global Mercury Assessment 2018, UNEP Inventory Toolkit Reference Report
5.1.2.2	Other coal use	Wastewaters and non-wastewater releases not addressed under another article of the Convention from coal storage, coal washing and air pollution control systems.	UNEP Inventory Toolkit Reference Report
	Coal mining	Wastewaters and non-wastewater releases not addressed under another article of the Convention from wet processing methods, such as coal flotation and coal washing.	EU and US PRTR
5.1.3	Petroleum– extraction, refining and use	Wastewaters and non-wastewater releases not addressed under another article of the Convention from oil extraction, oil refining and air pollution control systems.	Global Mercury Assessment 2018, UNEP Inventory Toolkit Reference Report https://cese.utulsa.edu/wp-content/uploads/2017/06/IPEC-2014-Removal-of-mercury-from-water-in-petroleum-industry.pdf ; EU and US PRTR
5.1.4	Natural gas – extraction, refining and use	Wastewaters and non-wastewater releases not addressed under another article of the Convention from natural gas extraction and refining.	UNEP Inventory Toolkit Reference Report EU and US PRTR

Source category in the mercury inventory toolkit		Release sources	Documented releases
5.1.6	Biomass-fired power and heat production	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems.	UNEP Inventory Toolkit Reference Report
Source category: Primary (virgin) metal production			
5.2.1	Mercury (primary) mining and mineral processing	Wastewaters and non-wastewater releases not addressed under another article of the Convention from mining and processing.	Global Mercury Assessment 2018, UNEP Inventory Toolkit Reference Report
	Mining, mineral processing, smelting and roasting of non-ferrous metals other than mercury	Wastewaters and non-wastewater releases not addressed under another article of the Convention from collected mine drainage, mineral processing, air pollution control systems, associated smelting and roasting and process residues.	Global Mercury Assessment 2018 (Al, Cu, Pb, Zn, Au). UNEP Inventory Toolkit Reference Report Canadian, EU, Norwegian, US and Australian PRTR.
	Primary ferrous-metal production	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems associated with coke production, coal tar processing, pig iron production and process residues.	Norwegian and Australian PRTR
Source category: Production of other minerals and materials with mercury impurities			
5.3.1	Cement clinker production	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems. Possible releases to land from disposal of process residues such as cement kiln dust.	UNEP Inventory Toolkit Reference Report Norwegian and EU PRTR https://www.govinfo.gov/content/pkg/FR-2010-09-09/pdf/2010-21102.pdf USEPA air emission rule for cement plants anticipating wet scrubbers for mercury control. 2021 Hg mass balance study on cement production Mercury release from fly ashes and hydrated fly ash cement pastes
5.3.2	Pulp and paper production	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems and from process residues.	Canadian, EU and US PRTR
5.3.4	Production of other chemicals, minerals and materials	Wastewaters and non-wastewater releases not addressed under another article of the Convention from fertilizer production, dyes, pigments and other chemicals.	Norway submission
Source category: Intentional use of mercury in industrial processes			
5.4.1	Chlor-alkali production using mercury cell technology	Wastewaters and non-wastewater releases not addressed under another article of the Convention from the production process and from contaminated plants.	Global Mercury Assessment 2018 UNEP Inventory Toolkit Reference Report Norwegian PRTR ex-Hg plant in UK (Runcorn) EuroChlor document

Source category in the mercury inventory toolkit		Release sources	Documented releases
Source category: Manufacturing of consumer products with intentional use of mercury			
5.5.1-5.5.9	Manufacturing of products containing mercury	Wastewaters and non-wastewater releases not addressed under another article of the Convention from manufacture of product categories not listed on Annex A, and product categories below the mercury content limits in Annex A.	Global Mercury Assessment 2018 UNEP Inventory Toolkit Reference Report
Source category: Other intentional product/process use			
5.6.1	Dental clinics	Releases to water, such as from new fillings or from the drilling of old fillings in dental clinics. Note that Parties may, but are not required to, address such releases under Article 4.	Global Mercury Assessment 2018 UNEP Inventory Toolkit Reference Report https://www.epa.gov/eg/dental-effluent-guidelines
5.6.3	Laboratory	Reagents containing mercury and mercury compounds discharged in wastewaters .	
Source category: Production of recycled metals (secondary metal production)			
5.7.1	Production of recycled mercury (secondary production)	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems.	UNEP Inventory Toolkit Reference Report Mercury-impacted scrap metal: Source and nature of the mercury
5.7.2	Production of recycled ferrous metals (iron and steel). (This includes the recycling of scrap vehicles.)	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems.	UNEP Inventory Toolkit Reference Report Mercury-impacted scrap metal: Source and nature of the mercury State of New Jersey imposes air pollution control requirements on electric arc furnace facilities.
5.7.3	Reuse or recycling of used industrial equipment	Releases may take place during the dismantling of factories, oil rigs, etc. where mercury-contaminated equipment (e.g., pipelines, tanks, heat exchangers) is recycled.	Ship recycling: reducing human and environmental impacts
Source category: Waste incineration			
5.8.1 - 5.8.4	Waste incineration	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems associated with hazardous waste, medical waste, municipal waste/industrial waste, and sewage sludge incinerators.	UNEP Inventory Toolkit Reference Report, EU BAT Reference documents and BAT conclusions also refer to specific limits on releases of Hg from waste incineration: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2010&from=EN
Source category: Waste deposition/landfilling and wastewater treatment			
5.9.1	Controlled municipal/general waste landfills	Releases to water from landfill leachate.	UNEP Inventory Toolkit Reference Report
5.9.5	Wastewater systems/treatment	Releases/Treated wastewater from industrial and municipal wastewater treatment processes. When residues/sludges are incinerated, releases/wastewater from air pollution control systems.	Global Mercury Assessment 2018 UNEP Inventory Toolkit Reference Report European PRTR Norway submission

Source category in the mercury inventory toolkit		Release sources	Documented releases
Source category: Crematoria			
5.10.1	Crematoria/cremation	Wastewaters and non-wastewater releases not addressed under another article of the Convention from air pollution control systems.	UNEP Inventory Toolkit Reference Report

Table 2: Additional point source categories that may be included in the broadened release inventories

Source category in the mercury inventory toolkit		Release sources	Documented releases	Whether addressed in other articles
Source category: Intentional use of mercury in industrial processes				
5.4.2	Vinyl chloride monomer production with mercury catalyst	Wastewaters and non-wastewater releases not addressed under another article of the Convention from the production process and air pollution control systems.	UNEP Inventory Toolkit Reference Report	Addressed by article 5
5.4.4	Other production of chemicals and polymers with mercury	Wastewaters and non-wastewater releases not addressed under another article of the Convention from the production of mercury-containing chemicals, from the use of mercury in production processes (e.g. alcoholate production).	UNEP Inventory Toolkit Reference Report	The production of sodium or potassium methylate and ethylate is addressed by article 5.
	Gold plating using the fire gilding process		Sri Lanka and Nepal MIAs	
	Other processes using mercury or mercury compound catalyst, not listed in Annex B of the Convention			
Source category: Manufacturing of consumer products with intentional use of mercury				
5.5.5	Polyurethane with mercury catalysts	Wastewaters and non-wastewater releases not addressed under another article of the Convention from the production process.	UNEP Inventory Toolkit Reference Report	Manufacturing is addressed by article 5.

Annex YY

Draft roadmap for developing BAT/BEP guidance

Release sources covered by the guidance

COP-4 will consider the categories of point sources of releases proposed by the group of technical experts. These point sources are expected to be covered by the BAT/BEP guidance to be developed.

Some point source categories may be prioritized for the development of BAT/BEP guidance. Since Article 9 of the Convention requires Parties to identify relevant point source categories no later than three years after the entry into force, and on a regular basis thereafter, information on the point source categories identified by Parties may be compiled for the prioritization of the development of BAT/BEP guidance. The first full national reports under Article 21 to be submitted by 31 December 2021 will include relevant information on the implementation of Article 9. Minamata Initial Assessment reports may also contain relevant information on point source categories for which BAT/BEP guidance is most needed.

Technical information on BAT/BEP

Existing information on specific technologies and practices, taking into account national circumstances and capacities of developed and developing countries, may be collected for the development of guidance. Information sources include technical documents used in national and regional contexts, such as the BAT reference documents (BREF) and national wastewater treatment standards for relevant sources. Parties may be invited to submit such relevant information. International industry associations, other non-governmental organizations and the UNEP Global Mercury Partnership may also wish to submit relevant information.

Structure of the BAT/BEP guidance

Article 9 Paragraph 7(a) of the Convention provides that the guidance should take into account any difference between new and existing sources and the need to minimize cross-media effects. BAT/BEP guidance on mercury emissions pursuant to Article 8 Paragraph 8(a) of the Convention, which sets out a similar requirement, may serve as an example for considering the structure of the guidance on mercury releases.

Also, the BAT/BEP Guidance should take into account national capabilities and circumstances of the Parties; in particular circumstances of developing and in transition economies countries.

Involvement of technical experts

This group of technical experts may serve as a group to collect technical information and draft the guidance. Parties may wish to change the membership of the group, considering the need for further expertise on wastewater treatment and other abatement technologies and practice. The group may wish to cooperate with experts in BAT/BEP for specific point source categories.

Timeline

The table below presents a possible timeline.

Secretariat to hire consultants to collect technical information on BAT/BEP, within the available resources.	[April] 2022
Secretariat to invite Parties, through COP bureau members, to confirm or change the membership of the group of experts.	[April] 2022
Secretariat to compile information on relevant point sources based on Article 21 national reports and other submissions.	[April] 2022
Secretariat to circulate a call to Parties and other stakeholders to submit existing information on national regulations or industry practice on the control of mercury releases from relevant sources.	[April] 2022
Group of technical experts to elect co-chairs, identify observers to invite, and agree on the modality of work including online meetings and face-to-face meetings, within the availability of resources.	[June] 2022

Group of technical experts to review information compiled by the Secretariat, with the support of consultants, including the submissions from Parties and stakeholders.	[September] 2022
Group of technical experts, with the support of the Secretariat and the consultants, to prepare a first draft of the guidance on BAT/BEP.	December 2022
First draft to be posted on the Convention website for comments and input.	January 2023
Deadline for comments from Parties and stakeholders on the first draft.	March 2023
Group of technical experts to revise the draft guidance considering the comments received.	April-June 2020
Draft guidance finalised for submission as COP-5 document.	July 2023

Relationship with other articles

In the process of developing the guidance, information relevant to other articles of the Convention such as Article 8 (emissions) and 11 (mercury waste) may become available. Such information may be incorporated into relevant guidance documents or made available on the website.