



Distr.: General  
9 December 2015

Original: English



**United Nations  
Environment  
Programme**

**Intergovernmental negotiating committee  
to prepare a global legally binding instrument  
on mercury  
Seventh session**

Dead Sea, Jordan, 10–15 March 2016

Item 3 (d) of the provisional agenda\*

**Work to prepare for the entry into force of the Minamata  
Convention on Mercury and for the first meeting of the  
Conference of the Parties to the Convention: activities to  
facilitate the rapid entry into force of the Convention and  
its effective implementation upon entry into force**

**Environmentally sound interim storage: compilation and  
summary of submissions; identification of relevant sections of  
the Basel Convention guidance; and a road map for work on  
interim guidance**

**Note by the secretariat**

1. In paragraph 3 of article 10, the Minamata Convention on Mercury requires the Conference of the Parties to adopt guidelines on the environmentally sound interim storage of mercury and mercury compounds intended for a use allowed to a party under the Convention, taking into account any relevant guidelines developed under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and other relevant guidance.
2. In paragraph 8 of its resolution on arrangements in the interim period, the Conference of Plenipotentiaries requested the Committee to support, as practicable and consistent with the priorities in the Convention, those activities required or encouraged by the Convention that would facilitate the rapid entry into force of the Convention and its effective implementation upon entry into force, including in particular guidelines on the environmentally sound interim storage of mercury.
3. At its sixth session the intergovernmental negotiating committee requested countries to provide the secretariat with information on sound mercury interim storage practices that they had adopted and successfully implemented. The committee requested the secretariat to prepare, for consideration at its seventh session, a compilation and summary of the information provided by countries; to identify, in collaboration with the secretariat of the Basel Convention and relevant experts, those parts of the technical guidelines for the environmentally sound management of wastes consisting of elemental mercury and wastes containing or contaminated with mercury developed under the Basel Convention that might be relevant to the interim storage of mercury other than waste mercury; and to propose a road map for work on interim storage guidelines. The secretariat initially requested countries to submit information no later than 1 May 2015. Following a decision by the bureau of the committee, however, that deadline was extended to 31 August 2015.

\* UNEP(DTIE)/Hg/INC.7/1.

4. The information submitted provided by countries is available at <http://mercuryconvention.org/Negotiations/INC7/INC7submissions/tabid/4754/Default.aspx>. A summary of the information is provided in annex I to the present note, while those sections of the Basel Convention technical guidelines relevant to the interim storage of non-waste mercury are summarized in annex II. In addition, a draft road map for work on interim storage guidelines, prepared by the secretariat in collaboration with the secretariat of the Basel Convention, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants, is set out in annex III. The committee may wish to take note of the information provided in annexes I and II and to consider and agree to the draft road map in annex III.

## Annex I

### Compilation and summary of information provided by countries

#### Brazil

1. The Brazilian Norm ABNT NBR 7500/2013 is the technical standard, applicable to the overland transport, handling movement and storage of hazardous chemical products in the country. It establishes a methodology for identifying dangerous products. It applies to transport units and packs/volumes and indicates risks and precautions associated with covered activities.
2. The Government recommends that interim storage guidelines under the Minamata Convention include:
  - (a) A definition of what is considered appropriate interim storage;
  - (b) Quantity limits;
  - (c) Good practices;
  - (d) Rules on handling and transport;
  - (e) Safety protocols;
  - (f) Standards for the identification of stocks.

#### China

3. China refers to the technical guidance on the environmentally sound disposal of mercury-contaminated wastes developed by the secretariat of the Basel Convention, as well as to the national regulations and requirements found in the regulations on the safe management of hazardous chemicals in China, hereinafter referred to as “the national regulations”. The national regulations provide information regarding the overall management of hazardous substances, including manufacture, storage, use, operation, marketing, transportation, registration and legal liabilities.
4. The targeted substances are hazardous chemicals. In the national regulations, specific information is provided on the location and flooring of mercury storage sites, specifying that storage sites should be in specialized warehouses, fields or specialized storage rooms. Such facilities should not be near active earthquake fault zones, areas prone to floods or geologic hazard areas. They should have relevant safety facilities and equipment for inspection and monitoring, ventilation, sun protection, temperature adjustment, fireproofing, fire control, explosion protection, pressure relief, poisoning prevention, neutralization, moisture prevention, lightning protection, static electricity resistance, antiseptis and leak prevention. Safety warning signs should be visible and communication and warning systems should be installed. The storage method, approach and quantity should meet the relevant requirements of national standards or regulations. A system of in-and-out stock checking and registration should be established.
5. Under the national regulations, employees must be educated and trained regarding hazardous chemicals and only qualified staff are permitted to work. The person in charge of an enterprise is responsible for the safe management of hazardous chemicals under safety requirements of laws, administrative regulations and national and industrial criteria. The person in charge should establish safety management rules, educate employees on safety and legal systems and provide technical training. Regular repair, testing and maintenance should be carried out for the safe use of safety facilities and equipment according to national standards, industry standards and relevant provisions of the State. Safety evaluation reports should be submitted every three years. The report should include suggestions and plans for addressing existing safety problems. Emergency plans should be put in place and emergency rescue staff equipped with necessary rescue equipment. Emergency rescue drills should be conducted on a regular basis.

#### Colombia

6. Colombia is interested in exploring the implications of the implementation of this activity. The country’s institutional capacity is extremely limited. It considers that guidance for temporary and permanent storage of mercury will help guide the country in considering this subject.

## European Union

7. The European Union has not adopted measures regarding the environmentally sound interim storage of mercury other than waste mercury. The European Union, however, has adopted criteria for the temporary storage of waste metallic mercury, which is relevant to the development of technical guidelines on environmentally sound interim storage.

8. These criteria address metallic mercury that has a mercury content greater than 99.9 percent per weight and that contains no impurities capable of corroding carbon or stainless steel (e.g., nitric acid solutions, chloride salts solutions). In terms of requirements for storage sites, they should be provided with engineered or natural barriers that are adequate to protect the environment against mercury emissions and a containment volume adequate for the total quantity of mercury stored. Metallic mercury should be stored separately from other waste. Storage site floors should be covered with mercury-resistant sealants and should be sloped and feature a collection sump. A fire-protection system should be provided. All containers should be arranged so that they are easily retrievable.

9. Carbon steel or stainless steel are preferred materials for containers. Containers should be gas and liquid tight, corrosion resistant and shock resistant; welds should therefore be avoided. The exteriors of containers should be resistant to damage that might be caused by storage conditions. Containers should be stored in collecting basins suitably coated so as to be free of cracks and gaps and impervious to metallic mercury with a containment volume adequate for the quantity of mercury stored. Design types should successfully pass the drop test and the leakproofness tests as described in chapters 6.1.5.3 and 6.1.5.4 of the United Nations *Recommendations on the Transport of Dangerous Goods: Manual of Tests and Criteria*. Containers should not be filled to more than 80 percent of their volume to avoid leakage and distortion of containers that could occur as a result of liquid expansion due to high temperatures.

10. A certificate of compliance with the above-mentioned criteria should be placed on every container. The certificate should include the name and address of the waste producer and of the person responsible for the filling of the container; place and date of the filling of the container; quantity of the mercury in the container; the purity of the mercury in the container and, if relevant, a description of any impurities, including an analytical report; confirmation that the container has been used exclusively for the transport/storage of mercury and any other specific comment. Each container should also bear a durable stamp mentioning the identification number of the container, the material of which the container is constructed, its empty weight, the identity of the manufacturer and the date of construction.

11. If storage is to last for more than one year a continuous mercury vapour monitoring system with a sensitivity of at least 0.02 mg mercury/m<sup>3</sup> should be installed in the storage site with sensors positioned at ground and head level. The system must include a visual and acoustic alert system. The system should be maintained annually. The storage site and containers should be visually inspected by an authorized person at least once a month and when leaks are detected action necessary to avoid emissions of mercury must be taken immediately. Emergency plans should be in place and adequate protective equipment for suitable handling should be available. All documents relevant to containers, including certificates as well as records concerning the destocking and dispatch of metallic mercury after its temporary storage and its destination and intended treatment, should be kept for at least three years after the termination of storage.

## Japan

12. Japan has submitted information relevant to the development of technical guidance on mercury from the technical standards for the storage of poisonous and deleterious substances under the Poisonous and Deleterious Substances Control Act (Act No. 303 of December 28, 1950). The targeted substances are mercury, mercury oxide, formulations containing mercury oxide, mercuric sulfate and formulations containing mercuric sulfate, mercuric nitrate and formulations containing mercuric nitrate, mercurous chloride and formulations containing mercurous chloride. Mercury sulphide (cinnabar) is exempted.

13. A storage facility or area should have a lock or should be surrounded by a robust fence. Mercury substances should be stored separately from other materials. Warning signs indicating that poisonous and deleterious substances are stored should be in place. It is prohibited to use any item that is usually used to contain food or drinks to store mercury. Containers should not present the risk of scattering, leaking, draining or seeping mercury. Labels on containers and packaging of any poisonous or deleterious substance should indicate “not for medical use” and either “poisonous substance” or “deleterious substance”. Labels must also indicate the name of ingredients, as well as the specific content of the container, and identify the manufacturer of the substance.

14. The name and amount of the substance, and the date on which it is sold or otherwise transferred, and the name, profession and address of the recipient of the substance should be recorded, and the record should be maintained for five years from the day the substance is sold or otherwise transferred.

15. If a mercury substance scatters, leaks, drains, seeps or migrates underground and there is a risk of a public health hazard or if a mercury substance is lost or stolen, a health centre, police station or fire defence organization must be notified immediately and emergency measures necessary to prevent public health hazards must be taken immediately.

### **Norway**

16. Norway does not have relevant examples of practices for the interim storage of mercury other than waste mercury.

### **Switzerland**

17. Switzerland refers primarily to the technical guidelines under the Basel Convention related to wastes consisting of elemental mercury and waste containing of or contaminated with mercury. The mercury guidelines adopted by the Conference of the Parties to the Basel Convention at its twelfth meeting need to be revised in cooperation with the intersessional working group on technical guidelines established under the Basel Convention. Switzerland further states that the conditions and requirements for the interim storage of mercury could to a large extent be the same as those for final disposal.

18. Where feasible, interim and final storage facilities should be shared within a region, and environmentally sound management should be ensured. Labour safety standards should be met.

19. Inventories of the amount of stored mercury and the threshold of mercury to be allowed in storage must be carried out. Risk and disaster management should be in place along with monitoring of storage. Compliance with all requirements should be regularly reported on. Each country should report to the secretariat how their interim and final storage facilities fulfil these requirements, perhaps at every meeting of the Conference of the Parties.

### **United States of America**

20. The United States of America has compiled information regarding sound storage practices that are in use or have been in use from a variety of sources including the United States Government, universities, non-governmental organizations and industry. The United States has further suggested that selected and relevant provisions from the Basel Convention guidelines should be included in the interim storage guidelines under the Minamata Convention.

21. Mercury should be stored separately from other chemicals and from work activities, and especially from incompatible materials, in an area made of fire-resistant materials, preferably in a separate room or otherwise in a cabinet with a lock. The area should have fire suppression and fire alarm systems and access should be restricted to those with adequate training. The location should be cool, dry, away from direct sunlight and sources of intense heat as well as have ventilation that can eject air from the location directly to the outside. Ventilation systems should not be shared with other work or public areas. Humidity should be kept below 40 percent relative humidity to minimize possible corrosion in case steel containers and shelves are used. The doors to the room or cabinet should be marked with relevant warning signs. Furthermore, the surfaces in the room should have a leakproof coating free of cracks, gaps, or other deterioration. Floors should be non-porous and seamless, as in the case of epoxy-coated cement floors, polyurethane-coated floors, seamless rubber floors or polyester flooring. Floor should be sloped or containers should be elevated so that released liquids can drain and be removed.

22. Containers should be leakproof and tightly closed and sealed, but must also be easy to open and resealable. Secondary containers or diked areas should be used. Stainless steel is an appropriate material as the steel does not react with mercury at ambient temperatures. However, containers specifically designed for mercury storage are commercially available and should be considered as a first option. The storage of mercury in unwashed containers that previously held other chemicals should be avoided. Furthermore, containers should be small enough such that the weight of mercury in them does not exceed the strength of the containers and containers with mercury in them should be placed in containment trays, in a curved, leakproof area or on an impermeable concrete pad with runoff controls or covered with a waterproof tarp.

23. All mercury containers should have clear labels stating their potential harmfulness, e.g.,  
WARNING: CONTAINS MERCURY VAPOR, HARMFUL AT ROOM TEMPERATURE,  
MAY BE FATAL IF HEATED IN THE OPEN, DO NOT BREATHE VAPOR, USE WITH  
ADEQUATE VENTILATION, AVOID SKIN CONTACT.
24. Employees involved with storing mercury should have relevant training including hazard communication.
25. Storage amounts should be verified on a routine basis to avoid unexplained losses. Routine inspections of mercury storage containers should be carried out to look for potential damage, leaks, spills or deterioration. Personal protective equipment, a spill kit and wash areas should be located near (but not in) storage spaces for easy access by workers. An emergency plan, preferably with multiple procedures, should be in place and should be used in case of mercury spills.

## Annex II

### Summary of relevant sections of the Basel Convention technical guidelines on Mercury Waste

1. The Basel Convention has produced technical guidelines for the environmentally sound management of wastes consisting of elemental mercury and wastes containing or contaminated with mercury.<sup>1</sup> Information from the Basel Convention guidelines relevant to interim storage of the above-mentioned mercury wastes is summarized below. The technical requirements regarding the storage of hazardous waste should be complied with, including national and international standards and regulations. The risk of contamination of other materials should be avoided.
2. The Basel Convention guidelines address wastes consisting of elemental mercury and wastes containing or contaminated with mercury. Stored wastes consisting of elemental mercury should be as pure as possible in order to avoid any chemical reaction and the degradation of containers. A mercury content greater than 99.9 weight per cent is recommended.
3. A number of factors should be considered in deciding on the location of storage facilities. A storage facility should have an environmental management system in place and measures sufficient to safeguard occupational and environmental health and safety should be taken. In terms of siting and design, in order to avoid any significant risk of mercury release and possible exposure to humans and the environment, storage facilities should not be built in sensitive locations such as floodplains, wetlands, areas with potential for leaching to groundwater, earthquake zones, Karst terrain, unstable terrain or locations with unfavourable weather conditions or incompatible land use. Storage areas should be designed to ensure that there is no unnecessary chemical or physical reaction to mercury. The aisles in storage areas should be wide enough to allow for the passage of inspection teams, loading machinery and emergency equipment. Storage facilities should have fire alarm systems and fire suppression systems and have negative pressure environments to avoid mercury emissions to the outside of the building. The temperature in storage areas should be maintained as low as is feasibly possible, preferably at a constant temperature of 21 C. Storage areas should be clearly marked with warning signs (FAO.1985; US EPA. 1997b; SBC.2006; US Department of Energy. 2009).<sup>2</sup>
4. Wastes containing mercury are stored temporarily at the waste generator's premises before the wastes are collected for disposal. It is recommended that a separate area or room be used for storing such wastes. Containers and packages enclosing waste containing mercury should not be placed together with other wastes; they should be marked and stored in a dry place such as a warehouse or other space that is not usually frequented by people. Waste should be stored by generators only for a limited time, as allowed by national standards.
5. Storage facilities should be kept locked to avoid theft or unauthorized access. Access to the targeted substances should be restricted to those with adequate training, including in recognition of mercury-specific hazards and handling. It is recommended that storage buildings for all types of wastes consisting of elemental mercury and wastes containing or contaminated with mercury should not be used to store other liquid wastes and materials.
6. Storage facility floors should not be penetrated by any drains or plumbing, although sloped floors and open flow gutters with rounded-down edges can be used to avoid mercury trapping under gutter covers and to assist in the collection of spills. The floors of storage facilities should be covered with mercury-resistant materials, such as an epoxy coating, and should be light coloured to allow the detection of mercury droplets. Floors and their coatings should be inspected frequently to ensure that the floors have no cracks and the coatings are intact. When choosing the materials from which to construct walls, materials that do not readily absorb mercury vapour should be selected. It is important to include redundant systems to prevent releases in the event of an unexpected occurrence (U.S. Department of Energy. 2009; World Chlorine Council.2004).
7. The risk of contamination of other materials should be avoided. Elemental mercury in bulk form must be carefully packaged in appropriate containers. Solid wastes should be stored in sealed containers such as barrels or pails, steel waste containers or specially constructed containers that do not release mercury vapour. Liquid wastes containing mercury such as paints and pesticides should be

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<sup>1</sup> UNEP/CHW.12/5/Add.8/Rev.1.

<sup>2</sup> These and all other citations in the present annex II are abbreviated citations found in the Basel Convention technical guidelines (UNEP/CHW.12/5/Add.8/Rev.1). The full citations may be found in the bibliography of the technical guidelines.

kept in their original containers, and their lids should be tightly closed. When original boxes or packages are not available, containers that are specially designed for storing wastes containing mercury (e.g., fluorescent lamp containers) should be purchased. Containers for wastes consisting of elemental mercury should be stored upright on pallets off the ground, with overpacking.

8. Containers or boxes for storing wastes containing mercury should be marked and dated appropriately.

9. Personnel should have appropriate and adequate training.

10. Facilities should have adequate monitoring, recording and reporting programmes.

11. Environmental authorities should develop regulatory frameworks setting out the responsibilities of relevant stakeholders, standards for mercury content, the management of products and components of extended producer responsibility programmes, and they should encourage participation by relevant parties and the public. Environmental authorities should develop regulatory frameworks setting out the responsibilities of relevant stakeholders and should be responsible for monitoring the performance of extended producer responsibility programmes (e.g., amount of wastes collected, amount of mercury recovered and costs accrued for collection, recycling and storage) and for recommending changes as necessary. The responsibility should be placed on all producers of the products considered, and free riders (producers who do not share in the responsibilities) should not be allowed, otherwise other producers are forced to bear costs that are disproportionate to their product market share.

12. A full inventory of the wastes kept at a storage site should be created and updated as waste is added or disposed of. Regular inspection of storage areas should be undertaken, focusing particularly on damage, spills and deterioration. Clean-up and decontamination should be carried out speedily, but not without alerting the authorities concerned. (FAO.1985; US EPA.1997b).

13. Large-scale users such as governments, businesses and schools will need a plan for storing large amounts of wastes containing mercury.

14. In terms of safety for facilities, site-specific procedures should be developed for implementing the safety requirements identified for storage of wastes consisting of elemental mercury and wastes containing or contaminated with mercury. A workable emergency plan, preferably with multiple procedures, should be in place and implemented immediately in case of accidental spillage or other emergencies. The protection of human life and the environment is paramount. In the event of an emergency, there should be a responsible person who can authorize modifications to the safety procedures when necessary in order to allow emergency response personnel to act. Adequate security siting and access to the affected area should be ensured (Environmental Management Bureau, Republic of the Philippines. 1997; SBC.2006; US Department of Energy. 2009).

15. Emergency response plans should be in place. While such plans can vary according to the waste management stage (i.e., interim storage prior to process or final storage) and physical and social conditions of each site, the principal elements of an emergency response plan include the identification of potential hazards, legislation governing emergency response plans, actions to be taken in emergency situations, including mitigation measures, personnel training plans, communication targets (fire services, police, neighbouring communities, local governments, etc.) and methods in case of emergency, and methods and schedules for the testing of emergency response equipment.

16. When an emergency occurs, the first step is to investigate the site. The person in charge should approach cautiously from upwind, secure the scene and identify the hazard. Placards, container labels, shipping documents, material safety data sheets, car identification charts, and knowledgeable persons on the scene are valuable information sources. The need to evacuate, the availability of human resources and equipment and possible immediate actions should then be assessed. In order to ensure public safety, an emergency response agency call should be made and, as an immediate precautionary measure, the spill or leak area should be isolated for at least 50 meters in all directions. In case of fire, an extinguishing agent suitable for the type of surrounding fire should be used, whereas water should not. For further information, the "Emergency response guidebook" (US Department of Transportation, Transport Canada, and the Secretariat of Communications and Transportation of Mexico (SCT). 2008) is helpful.

17. Spillage of elemental mercury, even in small amounts from easily-broken thermometers, should be considered hazardous and should be cleaned up with caution. Critical to determining what type of response is appropriate for any mercury spill is evaluating its size and dispersal and whether the necessary clean-up resources and expertise are available. If the spill is small and on a non-porous surface such as linoleum or hardwood flooring, or on a porous item that can be thrown away (such as a small rug or mat), it can be cleaned up personally. If the spill is large, or on a rug that cannot be

discarded, on upholstery or in cracks or crevices, it may be necessary to hire a professional. Large spills involving more than the amount of mercury found in a typical household product should be reported to the local environmental health authorities. If there is any uncertainty as to whether a spill should be classified as “large”, the local environmental health authorities should be contacted to be on the safe side. Under certain circumstances, it may be advisable to obtain the assistance of qualified personnel for professional clean-up or air monitoring, regardless of spill size (Environment Canada, 2002). Spills of elemental mercury in the course of commercial activities and in households have the potential to expose workers and the general public to hazardous mercury vapours. In addition, spills are both costly to clean up and disruptive. Clean-up procedures for small mercury spills are found in US EPA.2007c.

## Annex III

### Draft road map for the development of guidelines on the environmentally sound interim storage of mercury and mercury compounds

The interim secretariat of the Minamata Convention and the secretariat of the Basel, Rotterdam and Stockholm conventions have discussed the preparation of guidelines on environmentally sound interim storage of mercury and mercury compounds. The Basel Convention technical guidelines on the environmentally sound management of mercury wastes have information relevant to this, covering the key areas of concern addressed by countries with regard to their national controls relating to the storage of mercury and mercury compounds. The main task in preparing guidelines on interim storage under the Minamata Convention, therefore, is to amend relevant sections of the Basel Convention technical guidelines to refer specifically to the interim storage of mercury and mercury compounds that are not mercury waste as defined in Article 11 of the Minamata Convention.

Taking into account the scope of the work, and recognizing the need for expert input in some areas, the following road map is proposed.

<i>Activity</i>	<i>Timeframe</i>
The intergovernmental negotiating committee at its seventh meeting establishes a process for developing the guidelines and invites the Basel Convention Open-ended Working Group to participate through the participation of relevant experts.	March 2016
The Basel Convention Open-ended Working Group considers the invitation from the Committee, and seeks expressions of interest from relevant experts wishing to participate in the work.	May 2016
The interim secretariat of the Minamata Convention prepares, in cooperation with the secretariat of the Basel, Rotterdam and Stockholm conventions and the UNEP Global Mercury Partnership as appropriate, an initial draft of the guidelines on interim storage, based on relevant sections of the Basel Convention technical guidelines and other relevant sources and makes it available for comment.	September 2016
Participating experts provide comments to the interim secretariat of the Minamata Convention.	November 2016
The interim secretariat of the Minamata Convention, in consultation with the secretariat of the Basel, Rotterdam and Stockholm conventions and the UNEP Global Mercury Partnership as appropriate, prepares a revised draft of the guidelines taking into consideration all comments and makes the revised draft available for further comment.	December 2016
Participating experts provide comments to the interim secretariat of the Minamata Convention.	February 2017
The draft guidelines are provided to the Conference of the Parties of the Basel Convention for information.	May 2017
The draft guidelines are circulated for consideration and possible adoption by the Conference of the Parties to the Minamata Convention on Mercury at its first meeting.	To be determined, based on date of entry into force of the Convention