



**Conference of the Parties to the
Minamata Convention on Mercury
Fourth meeting**

Online, 1–5 November 2021*

Item 4 (a) (ii) of the provisional agenda**

**Matters for consideration or action by the Conference of
the Parties: mercury-added products and manufacturing
processes in which mercury or mercury compounds are
used: information on dental amalgam**

Information on dental amalgam

Note by the secretariat

I. Introduction

1. Paragraph 3 of article 4 of the Minamata Convention on Mercury provides that each party shall take measures for the mercury-added products listed in part II of annex A, which provides that measures to be taken by a party to phase down the use of dental amalgam shall include two or more of the nine measures listed in that annex.

2. The Conference of the Parties, at its third meeting, considered a proposal by a number of parties to amend annex A with regard to dental amalgam. The proposal was to move dental amalgam from part II of annex A and place it in part I, thus providing for the phase-out of the manufacture, import and export of dental amalgam. As a result of its deliberation, the Conference of the Parties adopted decision MC-3/2 on dental amalgam, in which it:

(a) Encouraged parties to take more than the two required measures in accordance with part II of annex A to phase down the use of dental amalgam;

(b) Requested the secretariat to collect information on the implementation of any such additional measures taken by parties;

(c) Requested the secretariat to collect information from parties and others, including related to the availability, technical and economic feasibility and environmental and health risks and benefits of the non-mercury alternatives to dental amalgam.

II. Information on the implementation of additional measures taken by parties

3. The following 14 parties submitted information on the implementation of additional measures taken by parties to phase down the use of dental amalgam: Brazil, Cameroon, Canada, Congo, Côte d'Ivoire, European Union, Italy, Japan, Jordan, Philippines, Thailand, United States of America, Uruguay, Viet Nam. Two non-parties, Mozambique and Nepal, also submitted information.

* The resumed fourth meeting of the Conference of the Parties to the Minamata Convention on Mercury is to convene in person in Bali, Indonesia, and is tentatively scheduled for the first quarter of 2022.

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Burkina Faso submitted information on behalf of the African States. Those submissions were made available on the website of the Convention and are compiled in document UNEP/MC/COP.4/INF/4.¹

4. Some Governments, in reporting on their measures, specifically mentioned the measures described in part II of annex A to the Convention and identified additional measures not included in that annex. Some Governments reported on their measures without referring to part II of annex A, in which case the secretariat considered how those measures related to that annex. Still other Governments did not provide information on the measures taken but presented a plan for future policy development or submitted a report on policy measures to be taken. The following table sets out an overview of the measures reported by Governments.

Overview of the submissions on the implementation of measures taken in addition to two of the measures listed in part II of annex A to the Convention

<i>Measure listed in part II of annex A</i>	<i>Parties and non-parties that have taken or plan to take the measure</i>	<i>Example of measures taken</i>
(i) Setting national objectives aiming at dental caries prevention and health promotion, thereby minimizing the need for dental restoration	Brazil, Canada, Japan, Philippines, United States	<ul style="list-style-type: none"> National strategy or administrative order Recommendation by the relevant ministry, including the Ministry of Health
(ii) Setting national objectives aiming at minimizing use of dental amalgam	Brazil, Cameroon, Congo, European Union, Italy, Thailand, Viet Nam	Adoption of national legislation or a national plan to phase down the use of dental amalgam
(iii) Promoting the use of cost-effective and clinically effective mercury-free alternatives for dental restoration	Brazil, Japan, Thailand, Viet Nam	Recommendation from the Ministry of Health or relevant authorities on promotion of alternatives
(iv) Promoting research and development of quality mercury-free materials for dental restoration	Brazil, Japan, United States	Supporting studies on mercury-free materials carried out by universities
(v) Encouraging representative professional organizations and dental schools to educate and train dental professionals and students on the use of mercury-free dental restoration alternatives and on promoting best management practices	Japan, Nepal, ^a Philippines, Thailand, United States	Developing updated training curricula for students at universities or academies providing dental health education
(vi) Discouraging insurance policies and programmes that favour dental amalgam use over mercury-free dental restoration	Japan	Excluding dental treatment using dental amalgam from health insurance coverage
(vii) Encouraging insurance policies and programmes that favour the use of quality alternatives to dental amalgam for dental restoration	Japan	National health insurance system in place covering dental care at a modest cost, enabling patients to choose mercury-free alternatives
(viii) Restricting the use of dental amalgam to its encapsulated form	Brazil, Canada, European Union, Thailand	<ul style="list-style-type: none"> Legislation to limit use to encapsulated form Discontinuation of licenses of bulk dental amalgam powder manufacturers
(ix) Promoting the use of best environmental practices in dental facilities to reduce releases of mercury and mercury compounds to water and land	Brazil, Canada, European Union, Japan, Mozambique, ^a Philippines, Thailand, United States	Promoting the use of dental amalgam separators at dental clinics

^a Non-party.

¹ The World Health Organization held an informal consultation with chief dental officers and public oral health leaders about the progress achieved in the phase-down in the use of dental amalgam across regions and in countries, with the aim of informing the Conference of the Parties, as is reported in UNEP/MC/COP.4/INF/26.

5. Other measures taken by parties and non-parties, as contained in their submissions, include the following:
- (a) Legislation prohibiting the use of dental amalgam for children and pregnant or breastfeeding women (European Union, Nepal);
 - (b) Recommendation that certain high-risk groups use non-mercury alternatives for dental fillings (United States);
 - (c) Technology-based pre-treatment standard for discharges from dental offices (United States);
 - (d) Awareness-raising activities (African States, Congo, Côte d'Ivoire, Jordan, Mozambique).

III. Information on non-mercury alternatives to dental amalgam

6. Information on non-mercury alternatives to dental amalgam were submitted by 9 Governments (Argentina, Brazil, Canada, Colombia, the European Union, Japan, Jordan, Kenya, the Republic of Moldova and Norway), the African States and 26 other entities. Those submissions were made available on the website of the Convention and are compiled in document UNEP/MC/COP.4/INF/4.

7. With regard to the availability of non-mercury alternatives to dental amalgam, parties and stakeholders provided information on the availability of alternatives such as composite resins, ceramics and glass ionomer cements, which are already widely used.

8. With regard to the economic feasibility of non-mercury alternatives, a number of parties and stakeholders observed that the price difference for dental restoration using alternatives is relatively small owing to improvements in mercury-free restoration techniques. One party provided a comparison of cost in its territory: about Can\$ 171 for amalgam compared to Can\$ 219 for composite, with a lifespan of about 11.5 years for amalgam compared to 8 years for composite. A number of parties referred to the additional cost for waste management and the environmental cost associated with the use of dental amalgam.

9. With regard to the technical feasibility of non-mercury alternatives, parties and stakeholders provided information on the advantages and disadvantages of dental amalgam and various alternatives, including the following:

- (a) Mercury-free materials exhibit satisfactory mechanical properties, with a lower cavity preparation requirement for composites, as well as better aesthetics.
- (b) Four main factors influence the longevity of a filling: the material, the method of restoration, the dentist's skills and the patient's dental hygiene.
- (c) Resin-modified glass ionomers are more fracture-resistant than glass ionomers, which, combined with their ability to form a chemical bond with tooth substance, has led to their use for small restorations, especially in paediatric dentistry.
- (d) Glass ionomer restorative material does not have the same physical and chemical properties and clinical performance as dental amalgam, and its lifespan is shorter than that of amalgam.

10. In terms of environmental health risks and benefits, parties and stakeholders noted that dental amalgam causes significant emissions and releases of mercury to air, water and soil, posing risks to human health and the environment. Some parties and stakeholders provided information on the risks associated with non-mercury alternatives, including concerns regarding chemicals associated with bisphenol A. One party referred to a study by the World Health Organization in 2010 concluding that dental materials were unlikely to be an important source of human exposure to bisphenol A. Parties and stakeholders noted that the environmental risks of non-mercury alternatives to dental amalgam had not yet been fully studied.

IV. Suggested action by the Conference of the Parties

11. The Conference of the Parties may wish to take note of the information set out in the present note, as well as the information submitted by parties and others set out in document UNEP/MC/COP.4/INF/4, and consider it as appropriate.