Ref: MC/COP5/2023/55 Geneva, 27 April 2023

Subject: Proposal by Botswana and Burkina Faso, on behalf of the Africa region, to amend Part I and Part II of Annex A to the Minamata Convention on Mercury on dental amalgam to be considered by the Conference of the Parties at its fifth meeting.

Dear Madam/Sir,

The purpose of this letter is to communicate to the Parties and the signatories to the Minamata Convention on Mercury the text of the amendment to Annex A to the Convention as proposed by Botswana and Burkina Faso on behalf of the Africa region.

For Annex A: Part I, dental amalgam is proposed for inclusion with 2030 phase-out date

For Annex A: Part II, two additional provisions are proposed for inclusion

The proposal is put forward for consideration by the Conference of the Parties at its fifth meeting, which is scheduled to take place from 30 October to 3 November 2023 in Geneva, Switzerland. This letter is being sent in accordance with paragraph 2 of Article 26, which provides that the text of any proposed amendment to the Convention is to be communicated to the Parties by the Secretariat at least six months before the meeting at which it is proposed for adoption.

Kindly find enclosed to this letter the proposal to amend Annex A to the Convention as well as an explanatory note regarding the proposed amendment as submitted by Botswana and Burkina Faso, on behalf of the Africa region, in accordance with paragraph 7 of Article 4. The Secretariat will circulate the text of the proposal and explanatory note translated in all UN official languages as soon as available.

To facilitate discussion at the fifth meeting of the Conference of the Parties, Parties may wish to share comments or questions regarding the amendment proposal with the representatives of the Africa region and the with Secretariat. Please send your comments by email to:

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and

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Should you require additional information or clarification, please do not hesitate to contact the Secretariat.

Yours sincerely,

Monika Stankiewicz

Executive Secretary

To: National Focal Points for the Minamata Convention on Mercury

Signatories to the Minamata Convention on Mercury

Cc: Governments through their official channels of communication to the UN Environment Programme

Permanent Missions to the UN Environment Programme and to the UN in Geneva

Depositary of the Convention, United Nations Office of Legal Affairs

Attm: Proposal by the Africa region to amend Part I and Part II of Annex A to the Minamata Convention on Mercury on dental amalgam at COP-5

Proposal by the Africa region to amend Part I and Part II of Annex A to the Minamata Convention on Mercury on dental amalgam at COP-5

The Africa region proposes to include in Part I, Annex A dental amalgam as mercury-added product with the following text:

Part I: Products subject to Article 4, paragraph 3

Mercury-added products	Date after which the manufacture, import or export of the product shall not be allowed (phase-out date)
Dental amalgam	2030

Furthermore, the Africa region proposes to add the following text below the two existing mandatory requirements in Part II of the Annex A as follows:

Part II: Products subject to Article 4, paragraph 3

Mercury-added products	Provisions
Dental amalgam	In addition, Parties shall: (iii) Submit to the Secretariat a national plan concerning the measures it intends to implement to phase out the use of dental amalgam (iv) Exclude or not allow, by taking measures as appropriate, the use of dental amalgam in government insurance policies and programmes

Background and explanatory note regarding the proposed amendment

BACKGROUND

Between 226 and 322 tonnes of mercury is used for dental amalgam around the world annually – one of the largest uses of mercury in products.[i] Much of this mercury from amalgam will enter the human body and then the environment, polluting (1) air via cremation[ii], dental clinic emissions[iii], and sludge incineration[iv]; (2) water via dental clinic releases not caught by separators[v], landfill runoff[vi], and human waste[vii]; and (3) land via landfills[viii], burials[ix], and sewage sludge spread on land.[x] Developing countries – with less infrastructure to collect, transport, and store even the insubstantial amounts caught in separators – are particularly burdened by this toxic product. The only way to prevent mercury exposure and pollution from this significant source is to phase out dental amalgam use. The proposed amendment aims to accomplish this goal.

EXPLANATORY NOTES AND REFERENCES

Availability of the non-mercury alternatives

Non-mercury alternatives to amalgam – most commonly composite and glass ionomer – are available today. Their use is widespread, and they have entirely replaced amalgam in countries that have phased out this mercury-added product, including Japan, Norway, the Russian Federation, Saint Kitts and Nevis, and Sweden.[xi]

Technical feasibility of the non-mercury alternatives

Studies show mercury-free composite fillings can last as long as – and even longer than – amalgam.[xii,xiii,xiv,xv,xvi,xvii,xviii ,xix] Non-mercury alternatives also offer important additional technical benefits over amalgam, including:

- *Preserving more tooth structure:* Both composite and glass ionomer fillings preserve tooth structure that must be removed to place an amalgam filling[xx], which can increase the longevity of the tooth itself.
- *Preventing future caries:* Glass ionomers release fluoride over time to help prevent future caries.[xxi]
- *Facilitating easier repairs:* Composite can be easier to repair than amalgam, which can save both tooth structure and costs.[xxii,xxiii,xxiv]

Economic feasibility of the non-mercury alternatives

The World Health Organization says that both composite and glass ionomer are "cost effective."[xxv]

As a number of parties and stakeholders observed in submissions to the Secretariat, the price difference for dental restoration using alternatives is relatively small owing to improvements in mercury-free fillings and techniques.[xxvi] Phasing out amalgam in favor of non-mercury alternatives also eliminates the high environmental costs of amalgam. Studies show that after environmental costs are factored in, amalgam is more expensive than composite.[xxvii,xxviii]

Environmental and health risks and benefits of the non-mercury alternatives

After more than 60 years of intensive study and use, non-mercury alternatives to amalgam have proven to be safe for both the environment and human health.[xxix] Non-mercury alternatives also offer additional benefits, including:

- *Increasing accessibility:* Glass ionomers can be used in atraumatic restorative treatment (ART) which costs half as much as amalgam placement and can be done in areas where electricity is not available, thereby increasing access to dental care.[xxx]
- *Decreasing airborne disease transmission:* Using glass ionomers for ART also does not generate aerosols, which is particularly beneficial when there is concern about possible airborne transmission of illness, such as during the COVID-19 pandemic. [xxxi]

[i] UN Environment (2017): *Global mercury supply, trade and demand.* United Nations Environment Programme, Chemicals and Health Branch. Geneva, Switzerland, 2017.

[ii] OSPAR Commission, *Overview assessment of implementation reports on OSPAR Recommendation 2003/4 on controlling the dispersal of mercury from crematoria* (2011)

[iii] See KA Ritchie et. al., Mercury vapour levels in dental practices and body mercury levels of dentists and controls, BRITISH DENTAL JOURNAL Volume 197 No. 10 November 27 2004, http://www.nature.com/bdj/journal/v197/n10/pdf/4811831a.pdf ("One hundred and twenty two (67.8%) of the 180 surgeries visited had environmental mercury measurements in one or more areas above the Occupational Exposure Standard (OES) set by the Health and Safety Executive."); see also Mark E. Stone, Mark E. Cohen, Brad A. Debban, *Mercury vapor levels in exhaust air from dental vacuum systems*, Dental Materials 23 (2007) 527–532.

[iv] U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States* (2013), p.23

[v] U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States*(2013), p.23 (see Figure 7)

[vi] U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States*(2013), p.23 (see Figure 7)

[vii] Skare, I. &Engqvist, A. 1994. Human exposure to mercury and silver released from dental amalgam restorations. Arch. Environ. Health 49 (5): 384-394

[viii] U.S. Geological Survey, *Changing Patterns in the Use, Recycling, and Material Substitution of Mercury in the United States*(2013), p.23 (see Figure 7)

[ix] Ibid.

[x] A Cain, S Disch, C Twaroski, J Reindl and CR Case, Substance Flow Analysis of Mercury Intentionally Used in Products in the United States, *Journal of Industrial Ecology*, Volume 11, Number 3, copyright Massachusetts Institute of Technology and Yale University.

[xi] WHO, *Report of the Informal Global WHO consultation with policymakers in dental public health, 2021. Monitoring country progress in phasing down the use of dental amalgam*. Geneva: World Health Organization, p. 12

[xii] Palotie, U. et. al.. 2017, *Longevity of 2- and 3-surface restorations in posterior teeth of 25- to 30-year-olds attending public dental Service—A 13-year observation*. Journal of Dentistry 62, 13-17

[xiii] Vieira AR et. al. (2017) *A Pragmatic Study Shows Failure of Dental Composite Fillings Is Genetically Determined: A Contribution to the Discussion on Dental Amalgams*. Front. Med. 4:186.

[xiv] Owen, Benjamin D., et al. *Placement and replacement rates of amalgam and composite restorations on posterior teeth in a military population*. U.S. Army Medical Department Journal, July-Sept. 2017, p. 88+

[xv] McCracken MS, et al. *A 24-month evaluation of amalgam and resin-based composite restorations: Findings from the National Dental Practice-Based Research Network*. J Am Dent Assoc. 2013;144(6):583-593

[xvi] Heintze, S.D. & Rousson, V. 2012, *Clinical effectiveness of direct class II restorations - a meta-analysis*, The journal of adhesive dentistry, vol. 14, no. 5, p.408

[xvii] N.J.M. Opdam, E.M. Bronkhorst, B.A.C. Loomans, and M.-C.D.N.J.M. Huysmana, *12-Year Survival of Composite vs. Amalgam Restorations*, JOURNAL OF DENTAL RESEARCH (October 2010), Vol. 89, 10: pp. 1063-1067

[xviii]Opdam NJ, Bronkhurst EM, Roeters JM, Loomans BA. A retrospective clinical study on longevity of posterior composite and amalgam restorations. Dent Mater 2007;23(1):2-8

[xix] BIO Intelligence Service (2012), *Study on the potential for reducing mercury pollution from dental amalgam and batteries*, Final report prepared for the European Commission-DG ENV, p.69

[xx] WHO, *Prevention and Treatment of Dental Caries with Mercury-Free Products and Minimal Intervention* (2022), https://www.who.int/publications/i/item/9789240046184, pp.9-15.

[xxi] WHO, *Prevention and Treatment of Dental Caries with Mercury-Free Products and Minimal Intervention* (2022), https://www.who.int/publications/i/item/9789240046184, pp.9-15.

[xxii] JJM Roeters, ACC Shortall, and NJM Opdam, *Can a single composite resin serve all purposes?*, *BRITISH DENTAL JOURNAL* **199**, 73 - 79 (2005), http://www.nature.com/bdj/journal/v199/n2/full/4812520a.html

[xxiii] Christopher D. Lynch, et. al., *Minimally invasive management of dental caries: Contemporary teaching of posterior resin-based composite placement in U.S. and Canadian dental schools*, J AM DENTA ASSOC 2011; 142; 612-620,

[xxiv] Niek J.M. Opdam, *Longevity of repaired restorations: A practice based study*, Journal of Dentistry 40 (2012) 829 – 835

[xxv] WHO, *Prevention and Treatment of Dental Caries with Mercury-Free Products and Minimal Intervention* (2022), https://www.who.int/publications/i/item/9789240046184, pp.9-15.

[xxvi] Note by the Secretariat: Information on Dental Amalgam (2021), https://mercuryconvention.org/sites/default/files/documents/working_document/4_5_DentalAmalgam.English.pdf

[xxvii]Concorde East/West, *The Real Cost of Dental Mercury* (March 2012), https://mercuryfreedentistry.files.wordpress.com/2016/02/the-real-cost-of-dental-mercury.pdf, pp.3-4

[xxviii] Lars D. Hylander & Michael E. Goodsite, *Environmental Costs of Mercury Pollution*, Science of the Total Environment 368 (2006) 352-370

[xxix] WHO, *Prevention and Treatment of Dental Caries with Mercury-Free Products and Minimal Intervention* (2022), https://www.who.int/publications/i/item/9789240046184, pp.9-15.

[xxx] Pan American Health Organization, *Oral Health of Low Income Children: Procedures for Atraumatic Restorative Treatment (PRAT)* (2006), http://new.paho.org/hq/dmdocuments/2009/OH_top_PT_low06.pdf.

[xxxi] Pan American Health Organization, *Oral Health of Low Income Children: Procedures for Atraumatic Restorative Treatment (PRAT)* (2006), http://new.paho.org/hq/dmdocuments/2009/OH_top_PT_low06.pdf.