

Canadian Council of Ministers of the Environment

**CANADA-WIDE STANDARD
on MERCURY for
DENTAL AMALGAM WASTE**

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PREAMBLE

The Canadian Council of Ministers of the Environment has determined that environmental levels of mercury across Canada warrant efforts to reduce atmospheric and waterborne emissions of mercury and mercury compounds, derived from both deliberate uses and from incidental releases.

Canadian jurisdictions, under a variety of regional, national, binational and international programs, treaties and agreements, have consistently targeted mercury for use, emission and release reductions. It is also recognized that the continued use of mercury in some important applications has been identified, including dental amalgams. The CCME Policy for the Management of Toxic Substances identifies that mercury and mercury compounds be managed through a lifecycle approach to minimize environmental releases as a consequence of its use. Taking action to minimize releases from ongoing uses is consistent with the precautionary approach endorsed in the Harmonization Accord and Canada-wide Standards Sub-agreement, as a direct link between mercury use and environmental levels can be difficult to establish. The Canadian Council of Ministers of the Environment have thus agreed to undertake and promote cost-effective actions to pursue reductions in environmental releases of mercury and mercury compounds.

In keeping with the goal of cost-effective actions to minimize releases of mercury and its compounds, a Canada-wide Standard for reducing environmental releases of dental amalgam waste has been developed. The goal of the standard is to use “best practices” to minimize amalgam wastes released to the environment.

Canadian and international studies have confirmed that placement and repair of dental amalgam fillings may contribute mercury-containing wastes to sewage systems, to municipal garbage and landfills, and to biomedical waste. While some amalgam wastes are currently recycled, this standard seeks to optimize and harmonize the removal of this mercury waste from municipal waste streams throughout Canada.

This standard represents a cost-effective approach in the life-cycle management of amalgams to reduce releases to the environment without affecting the known beneficial use of this product.

PART 1:

Dental Amalgam Waste¹

Rationale for standard

Dental amalgam remains a well-suited material for the restoration of dental health in Canada, which is important to the health and well-being of its citizens. Though it has been in use for 150 years, the development of synthetic resins and other substitutes has resulted in a decline in the use of amalgam. Nevertheless, a substantial number of dental fillings are placed and replaced each year². The removal of old fillings and shaping/polishing of new fillings generates a mercury-containing waste which becomes the “environmental issue,” as these practices result in amalgam particles being vacuumed from the mouth, and discharged to sewage systems. A substantial portion of this is collected by simple traps and filters and should be disposed of appropriately. The remaining portion may be discharged to the environment if not re-captured. The CWS seeks to significantly improve the capture of amalgam wastes through best management practices. Several concerns have led to the proposal that adoption of amalgam traps by Canada’s dentists is appropriate as the “best practice”. The dental community is composed of health care professionals who share a concern for the environment. The precautionary approach applied to the release of amalgam to the natural environment would suggest using waste diversion to limit environmental releases in the absence of conclusive proof that the amalgam particles are inert.

Nature and application:

The dental community in Canada can use amalgam traps to collect the waste before it enters the sewage systems and either recycle the waste amalgam or dispose of it appropriately.

The objective of the Canada-wide Standard is to substantially reduce releases of mercury in waste amalgam from dental practices through the adoption of best management practices, which include the installation, use and maintenance of recently available ISO certified amalgam traps or equivalent, by those dental practitioners generating amalgam wastes.

Numeric targets and timeframes:

The Canada-wide Standard is the application of “best management practices³” to achieve a 95%

1 Quantities reported refer to the amount of mercury in the dental waste stream (i.e. the mercury content in the amalgam).

2 Approximately 1.3 tonnes/year of mercury in new filling material is placed each year in the mouths of Canadians. Studies indicate a wide range and variability in the amount of amalgam wastes discharged by dental clinics from the removal of old fillings and from waste generated due to the placing of new filling. A report for Environment Canada authored by Dr. Mark Richardson suggests as much as 2 tonnes/year may be generated. The University of Toronto's Dr. Phillip Watson is conducting a study and survey to provide updated quantities of amalgam placement and waste generation.

3 Best Management Practises are defined as including the use of an ISO certified amalgam trap, or equivalent, and appropriate management of waste so mercury does not enter the environment. Appropriate management may include landfilling in a confined, engineered landfill with leachate collection systems, such as a hazardous waste landfill, recycling to either produce new amalgam or raw mercury, silver and copper for other uses, or stabilization/immobilization in a form that can be retired permanently.

national reduction in mercury releases from dental amalgam waste discharges to the environment⁴, by 2005, from a base year of 2000.

PART 2:

REPORTING ON PROGRESS:

Ministers will receive reports by jurisdictions and/or partners in the delivery of this standard in 2004 and 2007, and will ensure that a single public report is prepared and posted on the CCME web site for public access. The report in 2004 will reflect interim progress on achieving the CWS. The 2007 report will include an evaluation of this standard and a recommendation whether changes should be considered.

These reports will be accompanied by other information on additional outcomes, activities, research or issues which are relevant to the mercury CWS and/or product sector under consideration. Examples of such reporting include scientific information on mercury fate, and impacts from product life-cycles, such as methylation in sewage treatment plants. More details on reporting on progress are available in Annex 1.

Each jurisdiction will detail the means of obtaining achievement in a manner consistent with the typical or desired programs for the affected sector, so as not to impose an unnecessary level of reporting duplication upon the jurisdictions.

ADMINISTRATION:

Jurisdictions will review and renew Part 2 and Annex 1 five years from coming into effect.

Any party may withdraw from this Canada-Wide Standard upon three month's notice.

This Canada-Wide Standard comes into effect for each jurisdiction on the date of signature by the jurisdiction.

4 Environment includes soils, water, air and municipal waste landfills, the latter in recognition that mercury is persistent, bioaccumulative and toxic, and may leach from landfills or be emitted with landfill gas.

Annex 1

Mercury Reporting Framework

Introduction

Under the Harmonization Accord and its Canada-wide Environmental Standards Sub-Agreement, all jurisdictions are to report to the public and to Ministers on their progress towards achieving the CWSs for mercury.

This reporting framework is intended to provide a transparent and consistent mechanism for reporting by jurisdictions in a fashion which minimizes resource requirements for government and industry alike, while maximizing the availability of information on achievement of these standards.

The framework addresses:

- 1) frequency, timing and scope of reporting
- 2) guidance as to the means of determining compliance/achievement of the CWS
- 3) common measurement parameters for reporting purposes
- 4) data management and public reporting

Frequency, timing and scope of reporting

The reporting schedule will be tied to assessing the performance of the governments and partners in meeting the benchmarks and timelines relevant to the standards. The report issued in 2004 will include intermediate progress by this product sector and the report in 2007 will provide an overall evaluation of compliance for the standard and any recommendations for revisions. Jurisdictions and partners will cooperate to produce a single public report, under the guidance of CCME, to be posted on the CCME web site for public access. This information is intended to show performance on a national basis.

Means of determining compliance/achievement of the CWS

The Canada-wide Standard for dental amalgam waste has been developed with a view towards a largely voluntary approach. Compliance may be regulated or legally enforced in some areas, such as sewer use bylaws in municipalities. As such, it is important that governments and/or partners work together to share information in the event that some regional implementation takes place, so that adjustments can be made to ensure that a level playing field exists.

Common measurement parameters for reporting purposes

Each report will include specific measures for the purposes of public reporting:

- a) Dental amalgam waste quantities (kg mercury in waste amalgam) collected, recycled and disposed of, along with the number of dentists adopting best practices; and
- b) Average weighted mercury content of sewage sludge, as a means of tracking progress of dental and other sewer control activities.

Data management and public reporting

A consolidated data-report will be made available to all jurisdictions and to the Ministers, along with the draft public report, prior to formal release of the public report. The public report will be released upon approval by the Canadian Council of Ministers of the Environment.

Jurisdictions will provide a report prior to September 30 (2004 and 2007) so that the consolidated report can be prepared for review and approval. A draft public report will be provided for review and consideration prior to the Ministers' meeting at which public release is anticipated. That public report will be posted to the CCME web site upon approval by the Council of Ministers. Jurisdictions are encouraged to provide reference to the CCME web site and/or pointers in their own web sites in order to ensure a single location for mercury CWSs reporting should errors/miscalculations have to be corrected at some time.

In addition to the consolidated public reporting on mercury CWSs, jurisdictions must provide a contact for additional information in the advent that the public wishes to access achievement information. Such data will be supplied in a manner consistent with the normal data-reporting/compliance reporting procedures of the jurisdiction in question.

Canada-wide Standard on Mercury for Dental Amalgam Waste

Signed by:

British Columbia	Honourable Joyce Murray
Alberta	Honourable Lorne Taylor
Saskatchewan	Honourable Buckley Belanger
Manitoba	Honourable Oscar Lathlin
Ontario	Honourable Elizabeth Witmer
Environment Canada	Honourable David Anderson
New Brunswick	Honourable Kim Jardine
Nova Scotia	Honourable David Morse
Prince Edward Island	Honourable Chester Gillan
Newfoundland and Labrador	Honourable Ralph Wiseman Honourable Tom Lush
Yukon	Honourable Dale Eftoda
Northwest Territories	Honourable Jim Antoine
Nunavut	Honourable Olayuk Akesuk

Note: Québec has not endorsed the Canada-wide Accord on Environmental Harmonization or the Canada-wide Environmental Standards Sub-agreement.