World Health Organization

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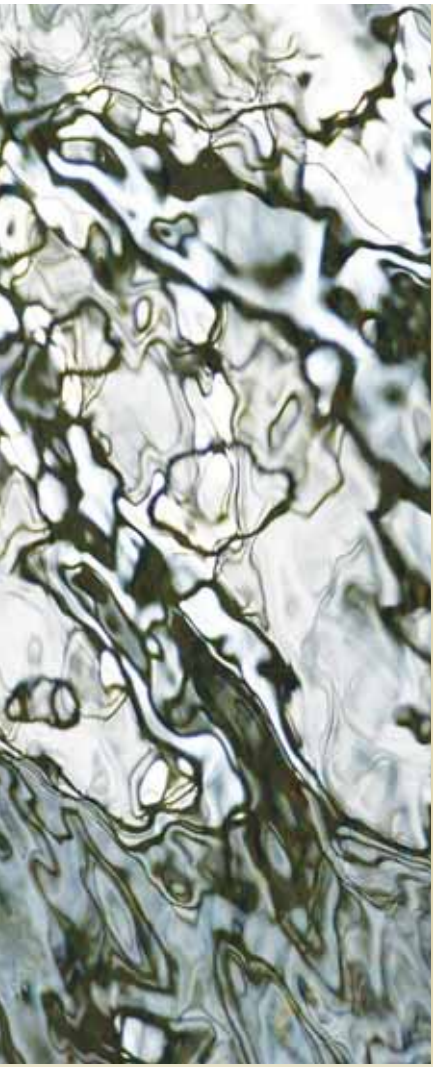

PROMOTING THE PHASE DOWN OF DENTAL AMALGAM IN DEVELOPING COUNTRIES

Citation

UNEP and WHO. 2014. Promoting the phase down approach of dental amalgam in developing countries.

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We wish to thank our partners and all stakeholders who contributed to the implementation of the East Africa Dental Amalgam Phase-Down Project (EADAP).

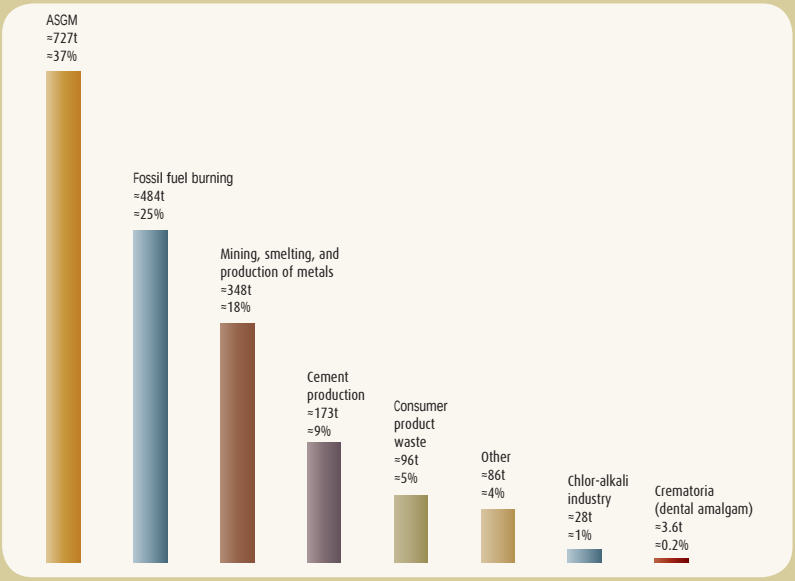
WHAT IS DENTAL AMALGAM?

Dental amalgam is a combination of metals, about 50 per cent of mercury in elemental form and the other metals being silver, tin, copper, and other trace metals. It has been used in the last 150 years for dental restoration due to its mechanical properties and the long term familiarity of dentists with its use.

(UNEP and WHO, 2008)

The UNEP Global Mercury Assessment Report 2013 revealed that emissions from cremation of the dead having dental amalgam accounts for 3.6 metric tonnes or 0.2 per cent of total global anthropogenic emissions.

Global anthropogenic atmospheric emissions



Source: UNEP, Global Mercury Assessment, 2013.

DENTAL MERCURY RELEASES TO WATER, SOIL AND AIR

A significant source of mercury pollution, dental amalgam is:

- often the largest source of mercury in municipal wastewater
- in the soil via wastewater sludge, land disposal and the burial of deceased persons with dental fillings
- an increasing source of mercury air pollution from wastewater sludge incineration and crematoria (due both to the rise in cremation and the increasing percentage of amalgam retained in the teeth of the deceased

Major pathways of mercury due to use of dental amalgam every year

Main pathways	Mercury (metric tonnes/ year)
Atmosphere	50 – 70
Surface water	35 – 45
Groundwater	20 – 25
Soil	75 – 100
Recycling of dental amalgam	40 – 50
Sequestered, secure disposal	40 – 50
Total	260 – 340

Source: World Health Organization, Future Use of Materials for Dental Restoration, 2011. Available at: http://www.who.int/oral_health/publications/dental_material_2011.pdf

CHALLENGES RELATED TO DENTAL MERCURY

Trade in dental mercury

Customs declarations and tariff codes generally label dental amalgam as “medical device”. It is impossible to separate from other statistics in the same category.

> Trade databases have no specific code for dental amalgam; trade data may be included in different categories
> Some dental amalgam are mixed by hand, others are used in form of capsules
> Few countries specifically track dental mercury use

The real cost of dental mercury

> Dental amalgam is cheaper for the patient
> Negative externalities (impact on the evironment) associated with the use of dental amalgam are not factored in the actual price of dental amalgam restorations
> Phasing-down yields environmental and health benefits

(Source: EU- DG ENV, BIO Intelligence Service. *Study on the potential of reducing mercury pollution in the environment*, March 2012.