Mercury containing products: use-impact-alternatives in Bangladesh

Mercury Containing Products in Bangladesh	Mercury Free Safer Alternatives
 Dental Amalgam	 Composite dental materials
 Mercury containing Thermometers	 Digital Thermometers
 Mercury containing Sphygmomanometers	 Aneroid or Digital Sphygmomanometers
 CFL bulb	 LED lamp
 Button cell batteries	 Lithium-zinc, low-mercury alkaline batteries
 Mercury containing electrical equipment's	 Mercury free Electrical equipment's
 Mercury containing beauty products & Jewellery	**Need to eliminate mercury in these products. Go for safer alternatives!!**

Mercury can be easily ingested by breathing the vapor or by swallowing or getting the liquid metal on your skin. Any or all can happen when mercury release into environment

What is Mercury (Hg)?

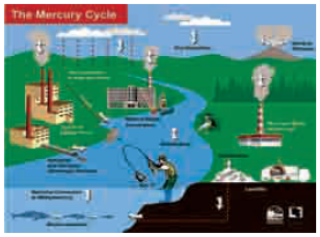
Mercury exists in three forms: metallic mercury, inorganic mercury and organic mercury. Metallic mercury is a silver-white metal that is liquid at room temperature. Inorganic mercury compounds contain mercury as well as sulphur, oxygen or chlorine, and they are mostly powders or crystals at room temperature. Organic mercury compounds consist of mercury and carbon, the most common one being methylmercury, which has different toxicological effects than the other two forms.

Mercury containing products and processes in Bangladesh

- Mercury in coal mining
- Chlor-Alkali Production
- Primary Metal Production
- Mercury in dental amalgam
- Mercury in jewelry
- Mercury in Chlor-Alkali production
- Mercury containing lamps
  - Fluorescent lamps
  - Metal halide lamps
  - Ceramic metal halide lamps
  - High-pressure sodium lamps
  - Neon lights
- Mercury in medical devices
- Mercury in fuel/energy sources
- Cement production
- Paper and pulp mill
- Mercury in cosmetics
- Mercury in cement industry
- Mercury in batteries
- Mercury in measuring devices
  - Hydrometers
  - Barometers
  - Manometers
  - Psychrometers
  - Flow meters
- Mercury in electrical switches

How does Mercury get into the environment?

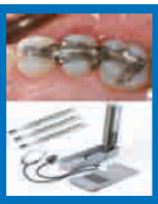
Mercury enters the environment via many pathways, like: air pollution caused by cremation dental clinic releases and waste and sewage sludge incineration; water pollution caused by human waste and dental clinic releases into septic systems and municipal wastewater; and soil pollution via landfills, burials and fertilizers.



People may be exposed to metallic mercury vapour if they come into contact with broken thermometers, fluorescent light bulbs, thermostats or barometers. Handling contaminated soil is also a potential source of exposure to mercury. Occupational exposure to mercury can occur in a number of work places that use mercury, such as in factories making electrical equipment or thermometers or chemical processing plants. Dentists may be exposed to metallic mercury vapour whilst making fillings.

Major Sources of Hg Emission & Releases

Industrial Process
Chlor-Alkali factory, Brick burning sector, Cement, Steel Industries
4.69 MT



Health & Dental Care
7.65 MT

Jewelry Sector
4.10 MT

Waste Deposition/Land Filling
1.12 MT

Recommendations

In Bangladesh we need to start the process of immediate ban of the mercury containing products within the deadline. Early ratification of the Minamata Convention on Mercury and prevent the further exposure of human health, wildlife, aquatic animals and toxic mercury load to the environment is become an urgent need.

Address to Government

- **Encourage Alternatives**

  Ensure availability and accessibility of mercury free safer, accurate and cost effective alternatives. The government must allocate budget for shifting from mercury to alternate products/instruments.

- **Training about Alternatives**

  Encourage professional associations and concerned stakeholders to educate and train professionals on the use of mercury free alternatives and to promote the best management practices.

- **Promulgation of Government Regulatory and Institutional frameworks and Programs**

  Sectors specific regulations of banning mercury based products and process, environmentally sound waste management plan, discourage insurance policies and program favorable for mercury use and encourage insurance policies and programs favorable for mercury free alternatives.

- **Making Plan to minimize and eliminate the uses of Mercury and Mercury base products and practices**

  Setting national objectives aiming to minimize and possibly elimination of the use of mercury containing products and practices.

How we exposed by Mercury?

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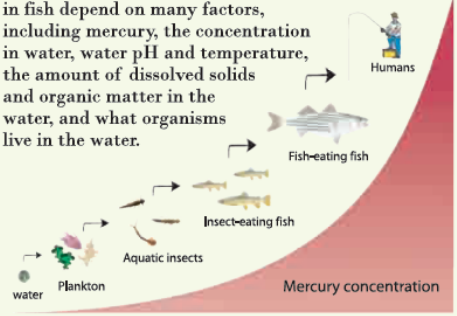
Moving in to the Food Chain

When mercury falls in rain or snow, it may flow into bodies of water like lakes and streams. When it falls out of the air as dry deposition, it may eventually be washed into those bodies by rain. Bacteria in soils and sediments convert mercury to methylmercury. In this form, it is taken up by tiny aquatic plants and animals. Fish that eat these organisms build up methylmercury in their bodies. As ever-bigger fish eat smaller ones, the methylmercury is concentrated further up the food chain. This process is called "bioaccumulation". Methylmercury concentrations in fish depend on many factors, including mercury, the concentration in water, water pH and temperature, the amount of dissolved solids and organic matter in the water, and what organisms live in the water.



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