Inception Workshop for the Project
"Management of Mercury and Mercury-Containing Waste"

Overview on Basel Convention Draft Technical Guidelines on the Environmentally Sound Management (ESM) of Mercury Wastes

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5 February 2009 - Siem Reap, Cambodia

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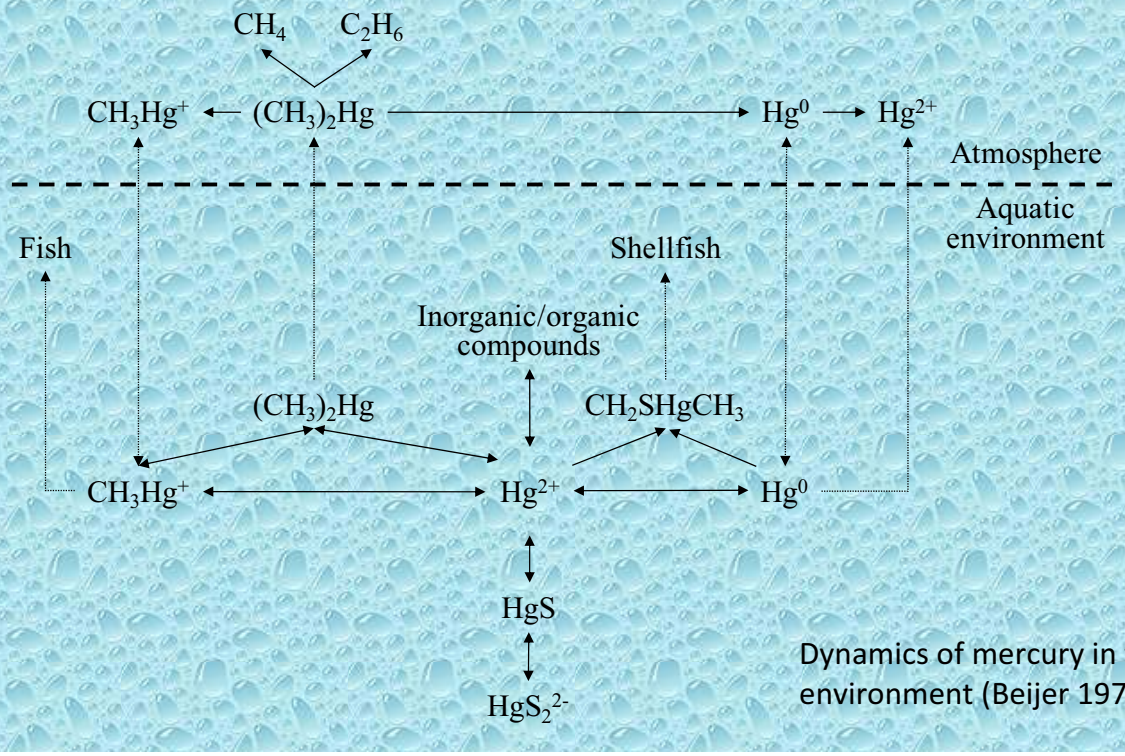
1. Background information *(1)*

- Mercury is widely used in products, such as thermometers, barometers, fluorescent lamps, etc.
- Industrial applications/uses in processes such as chlor-alkali production, vinyl-chloride-monomer (VCM) production, acetaldehyde production, etc.
- Mercury and methylmercury have triggered incidents with negative impacts on human health and the environment
- Japan (1950-60´s) , Iraq (1950´s. 1972) , Cambodia (1998)
- Mercury is recognized as one of the global hazardous pollutants due to the anthropogenic emissions.

1. Background information *(2)*

- Once released into the environment, mercury is never broken down to a harmless form and persists in the atmosphere, soil and aquatic phases.
- Due to environmental fate and transport it easily enters the food chain.
- Mercury-containing products and industrial mercury uses tend to be phased out.
- However it is still used in products such as fluorescent lamps , liquid crystal displays, etc.
- Risk reduction measures should be implemented through an appropriate ESM strategy for mercury wastes.

1. Background information *(3)*



Dynamics of mercury in the environment (Beijer 1979)

1. Background information *(4)*

- The TG follow decision VIII/33 of COP 8th of the Basel Convention
- Programme to support the implementation of the Strategic Plan focus area: B9 mercury waste
- Main focus of decision by COP is:
  - Developing partnerships for ESM of mercury waste
  - Developing capacity building and technical assistance programmes with prevention and reduction goals
  - Developing guidelines on the ESM of mercury waste, with emphasis on sound disposal and remediation practices
- The TG offer guidance for ESM of mercury waste and provide complehensive information about mercury

1. Background information *(5)*

- **Scope of Technical Guidelines (TG):**
  - Focus on mercury and mercury compunds listed in Annex I to the BC as categories of waste to be controlled
  - Metal and metal-bearing wastes, namely mercury and mercury-bearing wastes (waste electrical and electronic assemblies or scrap containing components such as mercury switches)
  - Poisonous (acute) substances – liable either to cause death or serious injury to humans when swallowed, inhaled or by skin contact
  - Toxic (delayed or chronic) substances – if when inhaled or ingested of if penetrate skin, may involve delayed or chronic effects
  - Ecotoxic substances – immediate or delayed adverse impacts to environment
  - Certain operations which may lead to recovery, recycling, reclamation, direct reuse or alternative uses (Section B Annex IV BC)
  - Disposal operations which do not lead to those alternatives (above)

1. Background information *(6)*

- **General Guidance on ESM of Mercury Waste follows on ESM criteria under the Basel Convention to ensure:**
  - Generation is reduced to a minimum, with social, economic and technical considerations into account
  - Availability of adequate disposal sites facilities
  - That those involved in mercury waste management take all steps necessary to prevent pollution or minimize consequences in the case of mishandling
  - Transboundary movement is reduced to the minimum and conducted in a sound and efficient manner to protect against adverse effects
  - International cooperation is implemented in activities among parties, organizations and private sectors to promote information exchange and technical cooperation on ESM
  - Appropriate legal, administratuve and other measures to prevent and sanction conduct in contravention of the Basel Convention are implemented and enforced
  - Transboundary movement of mecury waste is strictly controlled under the BC

2. Sources and Types of Mercury Waste *(1)*

- **A number of published materials by UNEP describe information about the sources of mercury emission and types of mercury waste, as well as international trade statistics**
  - UNEP – Global Mercury Assessment (2002)
  - Toolkit for Identification and Quantification of Mercury Releases (2005)
  - Guide for Reducing Major Uses and Releases of Mercury (2006)
  - Summary of Supply, Trade and Demand Information on Mercury (2006)

2. Sources and Types of Mercury Waste *(2)*

- Extraction and use of fuels/energy sources
- Primary (virgin) metal production
- Production of other minerals and materials with mercury impurities
- Intentional use of mercury in industrial processes
- Consumer products with intentional use of mercury
- Other intentional product/process uses
- Production of recycled metals (secondary metal production)
- Waste deposition/landfilling and wastewater treatment
- Crematoria and cemeteries

2. Sources and Types of Mercury Waste *(3)*

- **Casual factors of mercury waste**
  - Industrial equipments using mercury and consumer products
  - Wastewater treatment process
  - Thermal process of natural mercury impurities in raw materials
  - Processes at artisanal and small scale gold mining

3. Provisions for Mercury in UNEP and the Basel Convention *(1)*

- **UNEP GC Decisions**
  - Global mercury assessment
  - Technical assistance and capacity building to support efforts that address Hg
  - Partnerships programme (e.g. eliminate realeases)
  - Adhoc working group to review and assess measures
- **SAICM Global Plan of Action**
  - Global Plan of Action and related work plan and activities
- **Basel Convention**
  - General provisions (e.g. waste minimization, compliance and enforcement actions)
  - Classification of mercury waste
  - Transboundary movement control (in complicance with Basel obligations)

4. Chemical Analysis of Mercury in Waste *(1)*

- Reliable analytical data is a critical element to support technical information and its interpretation, usually required by policy and decision makers
- Analytical procedures (sampling, treatment, preparation, quantification)
- Existing methods provided by Japan, USEPA, others
- Standarized and reference materials for QA / QC purposes
- Instrumentation (e.g. CVAAS, CVAFS)
- Interpretation and statistical analysis

5. Guidance on ESM Criteria and Practices of Mecury Waste*(1)*

- Basel Convention TG on recycling/reclamation of metals and metal compounds (Annex I : As, Be, Cd, Pb, Hg)
- OECD – Core Performance Elements of ESM for Government and Industry
  - Adequate regulatory infrastructure and enfocement
  - Authorized Recovery Facility should have
    - Adequate measures of occupational safety,
    - Applicable EMS, monitoring , recording and reporting programme
    - Trainning programme for operators
    - Information exchange programme
    - Emergency plan
    - Closure and after-care plan

5. Guidance on ESM Criteria and Practices of Mecury Waste*(2)*

- Application of Best Available Techniques (BAT)
  - Measures designed to prevent or reduce emissions to air, land and water, including measures concerning waste.
  - The use of low-waste technologies
  - The use of less hazardous substances
  - Recovery and recycling practices, when appropriate
  - Technological advances and changes in scientific knowledge and understanding

5. Guidance on ESM Criteria and Practices of Mecury Waste*(3)*

- Application of Best Environmental Practices (BEP)
  - Documentation of existing mecury waste management practices and policie;