



BASEL CONVENTION *TECHNICAL GUIDELINES*



Technical guidelines for the environmentally sound management of wastes consisting of elemental mercury and wastes containing or contaminated with mercury



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Technical guidelines for the environmentally sound management of wastes consisting of elemental mercury and wastes containing or contaminated with mercury

As adopted by the tenth meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (decision BC-10/7)

Cartagena, Colombia, October 2011



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Abbreviations and acronyms

| ASGM | Artisanal and Small-Scale Gold Mining |
|----------------------------|--|
| ASTM | American Society for Testing and Materials |
| AOX | Absorbable Organic Halides |
| BAT | Best Available Techniques |
| CCME | Canadian Council of Ministers for the Environment |
| CEN | European Committee for Standardization |
| CETEM | Centre for Mineral Technology |
| CELEM | Compact Elucroscont Lamps |
| | |
| CH ₃ Hg or MeHg | Monomethylmercury, commonly called methylmercury |
| Cl | Chlorine |
| EMS | Environmental Management System |
| EN | European Standard |
| EPA | Environmental Protection Agency |
| EPR | Extended Producer Responsibility |
| ESM | Environmentally Sound Management |
| FAO | Food and Agriculture Organization of the United Nations |
| GMP | Global Mercury Project |
| HC1 | Hydrochloric acid |
| | Hydrofluoria aaid |
| | Menoume |
| Hg | Mercury |
| HgCl ₂ | Mercury dichloride |
| HgO | Mercury (II) oxide |
| HgS | Mercury sulphide or cinnabar |
| HgSO ₄ | Mercury sulphate |
| HNO ₃ | Nitric acid |
| IAEA | International Atomic Energy Agency |
| IATA | International Air Transport Association |
| ICAO | International Civil Aviation Organization |
| | International Labour Organization |
| IMERC | Interstate Mercury Education and Reduction Clearinghouse |
| IMO | International Maritima Organization |
| | International Organization for Standardization |
| 150 | |
| J-Moss | Marking of presence of the specific chemical substances for electrical |
| | and electronic equipment |
| JIS | Japanese Industrial Standards |
| JLT | Japanese Standardized Leaching Test |
| LCD | Liquid Crystal Displays |
| LED | Light Emitting Diode |
| MMSD | Mining, Minerals and Sustainable Development |
| MSW | Municipal Solid Waste |
| NEWMOA | Northeast Waste Management Officials' Association |
| NGO | Non-Governmental Organization |
| NIP | National Implementation Plan |
| NIMD | National Institute for Minamata Disease |
| NIMD | National institute for Minamata Disease |
| NOX | Onen anded Warking Creen |
| OEWG | Open-ended working Group |
| OECD | Organisation for Economic Co-operation and Development |
| OSPAR | Convention for the Protection of the Marine Environment of the North- |
| | East Atlantic |
| QA/QC | Quality Assurance/Quality Control |
| PAC | Powdered Activated Carbon |
| PACE | Partnership for Action on Computing Equipment |
| PBB | Polybrominated biphenyls |
| PBDE | Polybrominated diphenyl ethers |
| PCB | Polychlorinated biphenyl |
| PM | Particulate matter |
| POPs | Persistent organic pollutants |
| DVC | Polyninyl oblogida |
| | Portvirting of the Line of Control International States in The States in |
| конз | Restriction of the Use of Certain Hazardous Substances in Electrical and |
| a | Electronic Equipment |
| SAICM | Strategic Approach to International Chemicals Management |

| SBC | Secretariat of the Basel Convention |
|--------|--|
| SETAC | Society of Environmental Toxicology and Chemistry |
| SO_2 | Sulphur dioxide |
| SOP | Standard Operational Procedure |
| SPC | Sulphur Polymer Cement |
| S/S | Solidification/Stabilization |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TOC | Total Organic Carbon |
| TS | Technical Specification |
| UNECE | United Nations Economic Commission for Europe |
| UNEP | United Nations Environment Programme |
| UNIDO | United Nations Industrial Development Organization |
| VCM | Vinyl chloride monomer |
| WEEE | Waste Electrical and Electronic Equipment |
| WHO | World Health Organization |

I. Introduction

A. Scope

1. The present guidelines provide guidance for the environmentally sound management (ESM) of wastes consisting of elemental mercury and wastes containing or contaminated with mercury, pursuant to decisions VIII/33, IX/15 and BC-10/7 of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal and decision VII/7 of the Open-ended Working Group of the Basel Convention.

2. In paragraph 1 of Article 2 ("Definitions"), the Basel Convention defines wastes as "substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law". The following wastes are covered by the guidelines (see Table 2 for more examples):

(a) A: Wastes consisting of elemental mercury (e.g., elemental mercury recovered from waste containing mercury and waste contaminated with mercury and surplus stock of elemental mercury designated as waste);

(b) B: Wastes containing mercury (e.g., waste of mercury-added products):

(c) B1: Wastes of mercury-added products that easily release mercury into the environment when they are broken (e.g., waste mercury thermometers, fluorescent lamps);

(d) B2: Wastes of mercury-added products other than B1 (e.g., batteries);

(e) B3: Stabilized or solidified wastes containing mercury that result from the stabilization or solidification of wastes consisting of elemental mercury;

(f) C: Wastes contaminated with mercury (e.g., residues generated from mining processes, industrial processes, or waste treatment processes).

3. The present guidelines focus on wastes consisting of elemental mercury and wastes containing or contaminated with mercury categorized as hazardous waste.

B. About mercury¹

4. Mercury is or has been widely used in products such as medical devices (thermometers, blood pressure gauges), switches and relays, barometers, fluorescent light bulbs, batteries and dental fillings, and in industrial production such as chlor-alkali plants, vinyl chloride monomer (VCM) production, acetaldehyde production and mercury-added product manufacturing. Mercury may also be a by-product of raw materials refining or production processes such as non-ferrous mining and oil and gas operations. Mercury is recognized as a global hazardous pollutant. Mercury emissions and releases can be human-caused (anthropogenic) and may also come from natural sources. Once mercury is released into the environment, it persists in the atmosphere (mercury vapour), soil (ionic mercury) and aquatic phase (methylmercury (MeHg, or CH_3Hg^+)). Some mercury in the environment ends up in the food chain because of bioaccumulation and biomagnification and is eventually ingested by humans.

5. Improper handling, collection, transportation or disposal of wastes consisting of elemental mercury and wastes containing or contaminated with mercury can lead to releases of mercury, as can some disposal technologies.

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