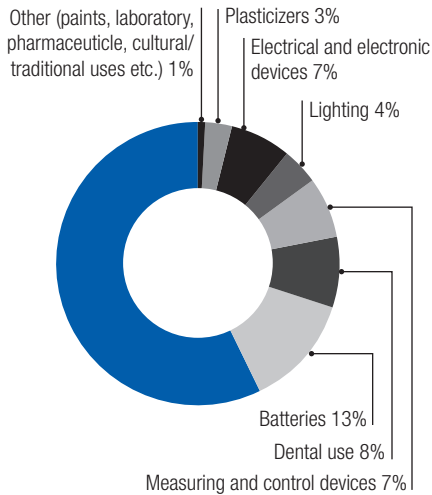




INC 2 BRIEFING PAPER SERIES

Mercury in Products

How Mercury Is Used



Mercury is a component of a wide range of products from thermometers to miniature batteries. There are mercury free alternatives for nearly every product currently requiring mercury, although the global transition to mercury free products will be quicker and easier for some product categories than others. Between 65-75% of mercury used in products is used in batteries, measuring and control devices, and electronic devices. These three products all have widely used mercury free alternatives, and are thus suitable for near-term treaty control measures.

For other product categories, the amount of mercury used is lower but can result in significant human exposure. For example, the use of mercury-added soaps and cosmetics (i.e., skin lightening creams) has caused health effects from mercury absorbed through the skin. Similarly, the use of topical antiseptics exposes people unnecessarily through their skin. Mercury use in polyurethane elastomer production exposes children and others through their use on gym floors and other applications.

Paints and pesticides historically used large amounts of mercury. It's unclear to what extent pesticides and paints containing mercury are still produced, particularly in the developing world, but even if such uses have declined, their inclusion in the treaty can prevent these uses from occurring again.

Treaty Control Measures

The treaty must contain a clear mandate to phase out the manufacturing of mercury-based products when mercury free alternatives are effective and economically viable. For products without viable, currently-available alternatives, the treaty should contain periodic review and streamlined annex modification provisions to identify adequate alternatives as they become practicable.

| | Major Products | 2005 Global Mercury Demand (Metric Tons) | Key Facts | Solutions |
|--------------------------------------|---|--|---|---|
| Batteries | <ul style="list-style-type: none"> • Button cell batteries (used in watches, toys, hearing aids) • Non-miniature cylindrical batteries (used in flashlights, electronics) | 300-600 | <ul style="list-style-type: none"> • Mercury used to decrease corrosion • Button cell batteries are largest current use of mercury in batteries • Mercury no longer added to make cylindrical batteries, except for limited manufacturing in China | <ul style="list-style-type: none"> • Non-Mercury anti-corrosives for button cells have been developed by manufacturers worldwide • Mercury phase out policy needed to facilitate increase of global mercury-free production capacity |
| Measuring and Control Devices | <ul style="list-style-type: none"> • Medical Devices (thermometers, blood pressure readers), barometers, hydrometers | 150-350 | <ul style="list-style-type: none"> • Medical devices account for most mercury use in this category • Non-mercury devices are proven effective and widely available | <ul style="list-style-type: none"> • WHO-HCWH global initiative provides tools and resources for ministries of health and health systems to phase-out mercury-based products • In some countries, performance standards should be developed to encourage production of high quality non-mercury devices |



| | Major Products | 2005 Global Mercury Demand (Metric Tons) | Key Facts | Solutions |
|--|---|--|--|--|
| Electronic Devices | <ul style="list-style-type: none"> Switches and relays (component parts in pumps, thermostats, control panels) | 150-350 | <ul style="list-style-type: none"> Electronic non-mercury alternatives are proven effective and widely available | <ul style="list-style-type: none"> EU's RoHS Directive+ restricts mercury in these products Many countries have or will impose similar conditions soon |
| Lighting | Fluorescent lamps (linear and compact), HID lamps (i.e., streetlights) Neon lamps | 100-150 | <ul style="list-style-type: none"> The amount of mercury needed per lamp has decreased significantly due to technology and production improvements Economically feasible non-mercury alternatives not yet available for many lamp applications | <ul style="list-style-type: none"> LED lights or other technologies expected to replace mercury lamps over time Continued technology improvements and maximum mercury content limits can minimize mercury usage in the interim, and eliminate outdated lamps and production techniques |
| Dental | <ul style="list-style-type: none"> Mercury-based amalgam to fill damaged teeth | 240-300 | <ul style="list-style-type: none"> Non-mercury products are effective in most cases, but availability and cost may be a challenge in the developing world | <ul style="list-style-type: none"> Some countries ban mercury use in dentistry WHO advocates disease prevention and education, and phase down of mercury usage |
| Plasticizers | <ul style="list-style-type: none"> Catalyst in Polyurethane manufacturing | 100-115* | <ul style="list-style-type: none"> Mercury catalyst ends up in final products, such as gym floors Non-mercury alternatives exist for almost every application | <ul style="list-style-type: none"> EU has more data on this use than other regions |
| Paints & Pesticides | <ul style="list-style-type: none"> Mercury used as fungicide/biocide | 4-10 (EU demand)* | <ul style="list-style-type: none"> Non-mercury alternatives widely used Significant stockpiles of mercury-containing pesticides remain, which can be sold or traded | <ul style="list-style-type: none"> Banned in many countries |
| Soaps/ Cosmetics/ Topical Antiseptics | <ul style="list-style-type: none"> Disinfectant in soaps Preservative in eye make-up | 1.1-2.5 (EU demand)* | <ul style="list-style-type: none"> Non-mercury alternatives widely used | <ul style="list-style-type: none"> Banned in many countries |

* Figures for 2007 consumption in DG ENV, 2008. Options for reducing mercury use in products and applications, and the fate of mercury already circulating in society. COWI AS and Concorde East/West Sprl for the European Commission, Dec. 2008, Brussels.

UNEP, 2006. Summary of supply, trade and demand information on mercury. Analysis requested by UNEP Governing Council decisions 23/9 IV. United Nations Environment Programme, Chemicals Branch, Geneva.

+ http://ec.europa.eu/environment/waste/wEEE/index_en.htm