Mercury Technology Bulletin Series: 002

Collection of Mercury Wastes discharged from Households

Background

Requirement of the Minamata Convention on Mercury

Under Article 11 of the Minamata Convention on Mercury, each Party is required to take appropriate measures so that mercury wastes are managed in an environmentally sound manner.

The Convention identifies three categories of mercury wastes:
(1) wastes consisting of mercury or mercury compounds,
(2) wastes containing mercury or mercury compounds and
(3) wastes contaminated with mercury or mercury compounds.

Environmentally Sound Management (ESM) of mercury-added products (e.g., fluorescent lamps and batteries) that become waste is a common challenge for many developing countries, since mercury and its compounds are used in various products for our daily lives. Mechanisms for appropriate source separation and collection of mercury wastes discharged from households is essential for the implementation of the Convention.

Source: UNEP "Practical Sourcebook on Mercury Waste Storage and Disposal"

Overview of the Technology

Due to increasing social concern about mercury since the outbreak of Minamata Disease, Japan has formulated and incrementally developed a collection system for wastes of mercury-added products discarded from households.

In Japan, municipalities are responsible for the collection and treatment of wastes discarded from households including mercury wastes. Therefore, each local government can choose the method to collect mercury wastes (e.g., door-to-door collection, curbside collection) depending on the local circumstances. Collection boxes of mercury-added products are prepared at various places that consumers visit frequently (e.g., fluorescent lamps/batteries at consumer-electronics retailer shops, thermometers at pharmacies) to promote an efficient collection of mercury waste.

Example of collection system of wastes of fluorescent lamps discarded from households in Japan

Wastes of mercury-added products discarded by households and subsequently collected by municipalities are recycled or disposed of in an environmentally sound manner by mercury wastes treatment companies licensed by municipalities.

Source of the pictures above: Guideline for separation and collection of mercury containing wastes from households (MOEJ)

Advantages/Strengths

Measures to prevent breakage during transportation

Wastes of mercury-added products such as mercury-containing thermometers or fluorescent lamps are fragile. Mercury spilling and scattering due to breakage should be prevented to avoid a risk to human health and the environment.

In Japan, measures are required to prevent the breakage of mercury-added products during transportation such as using containers suited to the shape, size and quantity of the mercury-added products. Those measures would also contribute to the increased collection rate in addition to the adverse effects caused by the breakage.

Awareness raising activities

Cooperation among stakeholders with a clear and common understanding of issues is crucial to promote the effective segregation and collection of municipal mercury wastes. In Japan, an effective segregation and collection mechanism has been developed not only by institutional measures but raising awareness among stakeholders.

The MOEJ has developed the guidelines (Guidelines for the Segregation and Collection of Wastes of Mercury-added Products Discarded from Households) that contain examples of actual cases and good practices of waste collection by municipalities. The guidelines also list key elements for the handling of municipal wastes of mercury-added products. Further, the MOEJ developed public relations materials (e.g., posters, pamphlets) for municipalities to promote the proper collection of wastes of mercury-added products, which can be used by the municipalities, Seminars for local governments are also organized occasionally.

Applicability

Japan has developed one of the most effective waste segregation and collection systems for wastes of mercury-added products in the world. This has been accomplished due to cooperation with and understanding of the public.

Establishing such a system would be challenging, but the Japanese experience and know-how could be a good reference to establish relevant systems in other countries. Furthermore, the Japanese experience of policy development, awareness-raising activities, and the collection system operated by municipalities could provide beneficial information to establish proper segregation and collection systems for mercury wastes in other countries.

Further Reading

MOEJ, Collection Methods of Wastes of Mercury-added Products discarded from Households (English DVD)
MOEJ, Guidelines for the Separation and Collection of wastes of Mercury-added products Discarded from Households (Japanese only) (http://www.env.go.jp/recycle/waste/mercury-disposal/h2712_guide1.pdf)

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