

A Guide to Waste Producers for Handling and Disposing Spent Mercury-Containing Lamps

Purpose

The guide serves to assist waste producers of large quantity of spent mercury-containing lamps to comply with relevant requirements stipulated under the Waste Disposal (Chemical Waste)(General) Regulation (CWR); and handle such lamps to facilitate subsequent collection and disposal.

What are mercury-containing lamps?

2. Mercury-containing lamps include the following which are also shown in **Annex 1**.
 - (a) fluorescent lamps (straight tubes / circular / other shapes);
 - (b) compact fluorescent lamps or those commonly known as energy-saving lamps; and
 - (c) high intensity discharge (HID) lamps including mercury vapour lamp, metal halide lamp and sodium lamp.

Why handle spent mercury-containing lamps properly?

3. Mercury is harmful to humans and the environment. Even though it is only present in trace amount in each mercury-containing lamp, release of mercury from broken lamps may contaminate the surrounding and create health hazard through inhalation or skin contact.
4. Unwanted mercury-containing lamps in a large quantity are classified as chemical waste under the CWR, since they would cause pollution to the environment or constitute a danger to health. As such, waste producers who handle a large quantity of unwanted mercury-containing lamps need to comply with the statutory requirements under the CWR.

Requirements of the Waste Disposal (Chemical Waste)(General) Regulation

Registration as chemical waste producers

5. Any person who produces or causes to be produced a large quantity of waste mercury-containing lamps should register with EPD as a chemical waste producer. In accordance with the CWR and having regard to the variation in mercury content of different brands, types and sizes of mercury-containing lamps, as a general guide, any person who generates or possesses over 500 pieces of spent mercury-containing lamp requiring disposal should register with EPD. In case of doubt, one should contact EPD for clarification.

Proper packaging, labeling and storage of chemical waste

6. Any chemical waste involving a large quantity of waste mercury-containing lamps have to be properly packaged, labelled and stored temporarily at the producer's premises before collection for off-site treatment and disposal.

Proper collection and disposal of chemical waste

7. Waste producers are required to arrange for their chemical wastes to be collected for treatment/disposal of at licensed disposal facilities. Only licensed chemical waste collector may collect and transport the waste from waste producers to licensed disposal facilities for disposal.

8. A statutory trip ticket system is in place for tracking movement of chemical waste. During collection of waste at the premises by licensed chemical waste collector, a trip ticket must be prepared and completed by both the waste producer and the collector. The waste producer should ensure that all information on the trip ticket is correct, and to keep a copy of each waste consignment for at least 12 months.

Disposal of spent mercury-containing lamps at CWTC

9. At present, all locally generated waste mercury-containing lamps are delivered to the Chemical Waste Treatment Centre (CWTC), which is a government facility, for dismantling and recovery of the mercury. Prior to collection and disposal, waste producers are required to package and store the spent mercury-containing lamps properly in accordance with the guidelines in **Annexes 2 and 3** to facilitate subsequent collection and disposal at the CWTC.

Enquiries

10. For enquiries of this guide or the chemical waste control scheme, please contact the EPD hotline at 2838 3111.

Typical Mercury-Containing Lamps

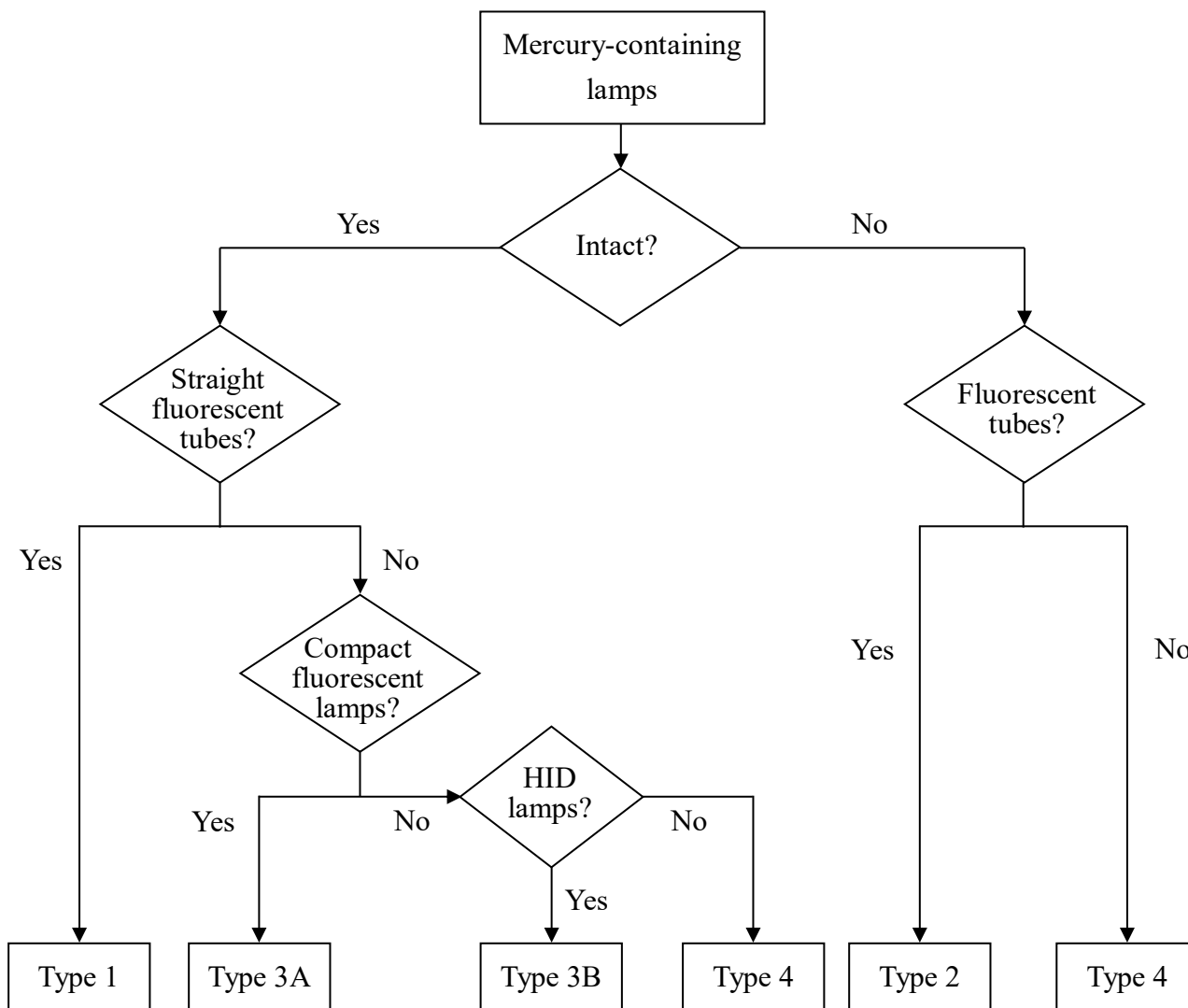
<p>(a) Fluorescent Lamps of Different Sizes (Straight Tubes / Circular / Other Shapes)</p>	
	
<p>(b) Compact Fluorescent Lamps (commonly known as energy saving lamp)</p>	
	
	
<p>(c) High Intensity Discharge (HID) Lamps: HID lamps come with many product lines and varieties. Most HID lamps have their specific applications. Relevant information of lamps may be obtained from their packaging or/and product catalogs. Some examples are shown below:</p>	
	

Proper Segregation and Packaging of Mercury-Containing Lamps

Segregation of mercury-containing lamps

1. You should segregate mercury-containing lamps into 5 types to facilitate subsequent processing at CWTC:
 - (a) Type 1 : Intact straight fluorescent tubes of any length
 - (b) Type 2 : Broken fluorescent tubes of any shapes
 - (c) Type 3A : All intact compact fluorescent lamps (CFLs)
 - (d) Type 3B : All intact high intensity discharge (HID) lamps
 - (e) Type 4 : All broken mercury-containing lamps other than Type 2 + intact non-linear fluorescent tubes (e.g. circular tube)

Read the following decision tree for segregation of mercury-containing lamps:



Packaging of mercury-containing lamps

2. Always handle lamps with care. Avoid breaking or crushing the lamps, which might lead to release of mercury. Proper containment of mercury-containing lamps is essential for safe transport to CWTC.

Step 1: Proper packing of spent lamps

3. Types 1, 3A and 3B (intact lamps):
Pack lamps back into the original lamp packaging (e.g. carton “hose” cover and/or carton box, etc.). If the original lamp packaging is not available,
 - (a) Type 1 (straight fluorescent tubes): Pack lamps of similar length in a 200-litre open top steel drum or similar solid packaging. Bundle the lamps by string and cushion them by carton or the like to prevent lamp movement / breakage. CWTC’s contractor will provide the required 200-litre steel drum to producers.
 - (b) Type 3A (compact fluorescent lamps (CFLs)) and Type 3B (high intensity discharge (HID) lamps) : Pack different types of lamps in separate plastic bags, then place them inside a carton box or similar solid packaging with cushioning carton or the like in between. Place only one type of lamps in each carton box or similar solid packaging.
4. Types 2 and 4 (broken lamps):
 - (a) Place strong plastic bags inside carton box or similar solid outer packaging.
 - (b) Contain the lamps and debris in the bags. (Place only one type of lamps in each carton box or similar solid outer packaging.)
 - (c) Seal each bag with adhesive tape.
 - (d) Use 200-litre steel drums instead of plastic bags if the quantity of broken lamps is large. These drums are available from the CWTC upon request.
 - (e) Additional notes:
 - (i) Wear proper personal protective equipment, such as gloves and goggles to handle the broken lamps.
 - (ii) Refer to (b) above, do not include other materials in the plastic bags such as the individual lamp packaging.

Step 2: Sealing the outer packaging and labeling

5. Seal the outer packaging to avoid spillage of the contents during handling:
 - (a) Close the carton box or outer packaging.
 - (b) Seal it with plastic tape or the like.
 - (c) If closing and sealing is not practicable, put the outer packaging into a large plastic bag and

then seal the bag.

6. Label all packaging:
 - (a) Affix a hazard warning label as required by the CWR. See a sample label at **Annex 3**.
 - (b) Minimum size of the label: A5 paper (i.e. half the size of A4 paper).
 - (c) The label should show clearly: the name, address and telephone number of the waste producer.
 - (d) Mark clearly on the package the types of lamps (types 1 to 4) contained inside.
7. **Additional note**: Avoid the packaging from getting wet at all times.

Storage of properly packaged mercury-containing lamps

8. Store the properly packaged mercury-containing lamps in a designated storage area for chemical waste. The storage area should be:
 - (a) enclosed on at least three sides (or inside a room);
 - (b) displayed with a hazard warning panel marked with “CHEMICAL WASTE 化學廢物”, with English and Chinese characters not less than 6 cm in height marked red in a white background.
9. For detailed storage requirements, please refer to the “Code of Practice on the Packaging, Labelling and Storage of Chemical Waste”, which is available at EPD’s website: http://www.epd.gov.hk/epd/english/environmentinhk/waste/guide_ref/guide_cwc_sub3.html

Delivery of mercury-containing lamps to the CWTC

10. Waste producers of spent mercury-containing lamps should first contact the CWTC to open an account as a first time user registration, which will take one to two weeks. For enquiries on collection / reception / treatment of mercury-containing lamps and account opening issues, please contact the Customer Service of CWTC at 2434 6450 (phone) or 2497 4290 (fax).
11. Waste producers should engage a licensed chemical waste collector for delivering the mercury-containing lamps to the CWTC. A full list of such collectors can be found at EPD’s website: http://epic.epd.gov.hk/ca/uid/waste_chemical/p/1
12. When consigning the mercury-containing lamps to a licensed collector, the waste producer should
 - (a) fill in and sign on the relevant part of the trip ticket in triplicate;
 - (b) retain a copy of the trip ticket for at least 12 months.

Charges

13. The current charge for disposal of spent mercury-containing lamps at the CWTC is HK\$1,130 per tonne.

CHEMICAL WASTE 化學廢物


Chemical name/Common name

化學名稱或普通名稱

Mercury-containing lamp 含水銀的燈/光管

Waste type and Code 廢物種類及代號

Mercury 水銀, S66

Particular Risks 危險情況

- Toxic by inhalation (吸入有毒)
- Risk of serious damage to eyes (有嚴重傷害眼睛的危險)
- Can be absorbed through skin (可透過皮膚吸收)
- Danger of cumulative effects (累積效果的危險)
- Possible respiratory and skin sensitiser (吸入皮膚接觸可能引起敏感)

Safety Precautions 安全措施

- Use appropriate respirator (使用適合的呼吸器)
- After contact with skin, wash immediately with plenty of water (沾及皮膚後，立即用大量清水來清洗)
- In case of accident or if you feel unwell, seek medical advice immediately (遇到意外或感到不適時，立即就醫診治)

Name, Address and Telephone No. of Waste producer

廢物產生者姓名、地址及電話