



附錄 03：各國電池管制要求
Appendix 03 : Battery requirements from some countries

摘要 Summary

本文介紹了歐盟、美國、中國、加拿大等各個國家有關電池的限制要求及相關標識，主要有以下幾項內容：

This article describes the European Union, the United States, China, Canada and other countries about the battery requirements and related identification, there are following contents:

1. 在歐盟市場上銷售之電池需滿足電池指令(2006/66/EC)要求。
The batteries sold to EU should meet EU Battery Directive (2006/66/EC).
2. 在日本市場上銷售之電池需滿足標識要求。
The batteries in Japan market must meet the identification requirement.
3. 在美國市場上銷售之電池需滿足限制、回收和標識等要求。
The batteries in USA market must meet the limit, recycle and identification requirement.
4. 在中國大陸市場上銷售之電池需滿足《關於限制電池產品汞含量的規定》。
The batteries in Chinese mainland market must meet "Regulation on Restriction of Hg in Batteries".
5. 在台灣市場上銷售之電池需滿足《含汞乾電池禁限用政策》和標識要求。
The batteries in Taiwan market must meet Taiwan's New Rules on Dry Battery Registration Dry Battery Registration" and identification requirements.
6. 在加拿大市場上銷售之電池需滿足有關環保法規中涉及到含汞電池的規定。
The batteries in Canada market must meet Canadian Environmental Law about batteries containing mercury.





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一. 在歐盟市場上銷售之電池需滿足如下電池指令 (2006/66/EC) 要求

The batteries sold to EU should meet EU Battery Directive (2006/66/EC)

1.1 管制物質要求

Substances requirements

1.1.1 電池、蓄電池及鈕扣電池，含汞量不得超過 0.0005% (5 ppm) 重量百分比。

Batteries, accumulators and button cells shall not contain more than 0.0005% (5 parts per million or ppm) mercury by weight.

1.1.2 可攜式電池及蓄電池，含鎘量不得超過 0.002% (20 ppm) 重量百分比，包括裝置於電器內的同類產品。用於以下產品的可攜式電池及蓄電池除外，包括緊急照明及逃生預警系統、醫療設備。

Batteries shall not contain more than 0.002% (20 ppm) cadmium by weight. Batteries intended to use for following applications are exempt from the cadmium requirement, such as emergency lighting, escape alarm system, and medical equipment.

1.2 電池的回收

Battery's recycling

1.2.1 所有廢棄電池與蓄電池皆須回收，最低回收比率可參考 2006/66/EC 之附錄三。

The minimum recycling efficiencies for all waste batteries and accumulators have been defined in Annex III of 2006/66/EC.

1.3 電池標示

Battery's marking

1.3.1 所有電池、蓄電池及電池組均須附有打上交叉的輪狀垃圾桶標誌，如圖 1 所示，電池組標示範圍不可小於最大面積的 3%。若電池、蓄電池及電池組小於若干尺寸，則可把標誌印於包裝上。

All batteries, accumulators and battery packs shall be marked with the symbol of crossed-out wheeled bin, like the Figure 1. The wheeled bin symbol shall cover at least 3% of the battery size. If the battery, accumulators and battery packs are too small to be printed, the mark can be printed on the package.



圖 1

Figure 1





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1.3.2 所有電池須清楚標示電容量。

Batteries shall also be marked with the capacity clearly.

1.3.3 所有含汞量超過0.0005%、含鎘量超過0.002%、含鉛量超過0.004%的電池、蓄電池或鈕扣型電池，須附注化學符號Hg、Cd及Pb，如圖2。

Batteries with more than 0.0005% (5 ppm) mercury, 0.004% (40 ppm) lead or 0.002% (20 ppm) cadmium must also be marked with the chemical symbol (Hg for mercury, Pb for lead, Cd for cadmium) , shown as Figure 2.

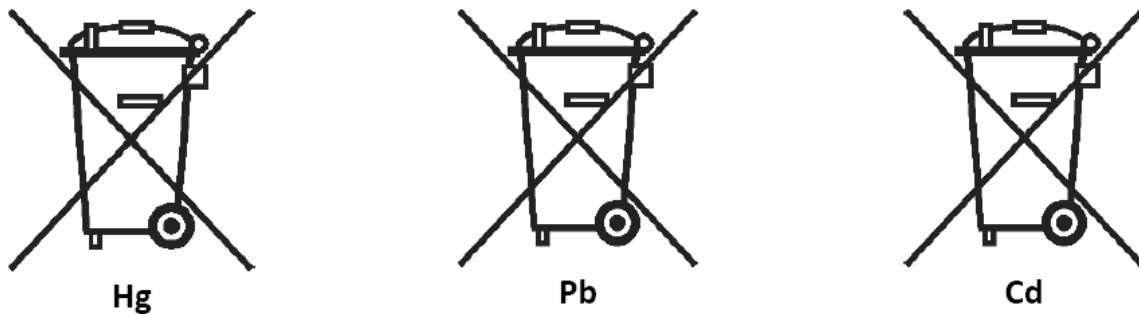


圖 2
Figure 2

二. 在日本市場上銷售之電池需滿足以下條件：

The batteries in Japan market must meet the following conditions:

- 2.1 依據聯合國水俣公約之協議，日本作為簽署國之一，2020 年起將禁止含汞電池之生產、進口或出口(不包括含汞量低於 2%的扣式鋅氧化銀電池以及含汞量低於 2%的扣式鋅空氣電池)。
According to the agreement of the Minamata Convention on Mercury, Japan as a country signed the Convention, will prohibit the manufacture, import and export of batteries containing mercury by 2020. (Except for button zinc silver oxide batteries with a mercury content < 2% and button zinc air batteries with a mercury content < 2%.)

- 2.2 日本電池工業協會根據國際標識標準化體系規定了統一的電池標識，如圖 3：

According to international identification standardization, the Battery Association of Japan (BAJ) defined the unified battery identification, see Figure 3:

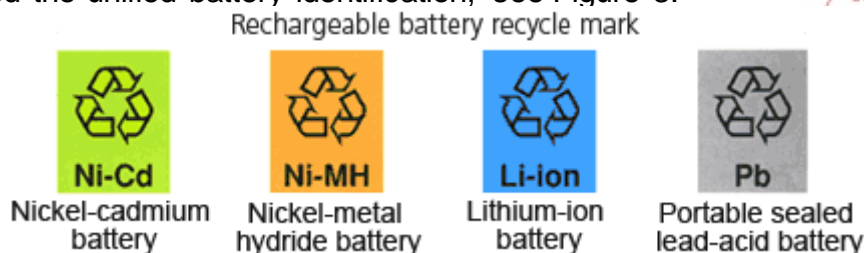


圖 3 日本電池標識

Figure 3 Japan battery mark

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三. 在美國市場上銷售之電池需滿足以下條件：

The batteries in USA market must meet the following conditions:

3.1 含汞電池和可充電電池管理法

3.1.1 禁止銷售有汞鹼錳電池(鈕扣鹼錳電池允許含汞量為每只電池不超過 25mg)

No person shall sell any alkaline-manganese battery containing mercury (the limitation on mercury content in alkaline-manganese button cells shall be 25 milligrams of mercury per button cell)

3.1.2 禁止銷售含汞碳鋅電池

No person shall sell any Carbon-zinc battery containing mercury

3.1.3 在美國禁止使用鈕扣氧化汞電池

No person shall use a mercuric-oxide battery for use in the United States

3.1.4 禁止銷售任何氧化汞電池，除非該電池的製造商明確標示電池回收處，電池回收點必須經聯邦、州、當地政府管理部門的批准，許可從事接收和回收處理廢舊電池。

No person shall sell, offer for sale, or offer for promotional purposes a mercuric-oxide battery for use in the United States unless the battery manufacturer, or the importer of such a battery—identifies a collection site in the United States that has all required Federal, State, and local government approvals, to which persons may send used mercuric-oxide batteries for recycling or proper disposal;

3.1.5 《管理法》還規定了標識的內容和式樣。合規的電池、充電產品及其包裝上均需要貼上國家統一使用的標籤(如圖 4)。另外，可充電電池的外表上須貼上統一規定的標籤，標籤上須印有“電池不得任意丟棄，須妥善處置”字樣。

This Management Act also provides the content and for style identification. Qualified battery, charging products and their package all need to be adhered the uniform label (As the figure 4 shown). On the other side, the surface of rechargeable battery needs to be adhered the specified label, which printed “BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY.”



圖 4
Figure 4

3.2 標識、轉運廢舊鎳鎘電池管理法

Identification, transfer of waste Ni-Cd Battery Management Act

美國還建立了採用不同顏色的收集箱收集不同類別的電池，如圖所示：

The United States also set up collection boxes in different colors to collect different types of battery, as shown:





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A. 鎳鎘電池(Ni-Cd) B. 鎳氫電池(Ni-MH) C. 鋰離子電池(Li-Ion) D. 小型密封鉛電池(Pb) E. 鎳鋅電池(Ni-Zn)



圖 5

Figure 5

四. 在中國大陸市場上銷售之電池需滿足以下條件

The batteries in mainland China market must meet the following conditions

4.1 根據中國 RoHS 認證法規的要求，電池包含在認證範圍內，鎘含量低於 0.01%(100 ppm)，汞含量低於 0.1%(1000 ppm)，鉛含量低於 0.1%(1000 ppm)。

According to the requirements of China RoHS certification regulations, the battery is included in the scope, cadmium levels must below 0.01% (100 ppm), mercury levels must below 0.1% (1000 ppm) and lead levels must below 0.1% (1000 ppm).

4.2 鹼性和非鹼性二氧化錳電池的汞、鎘和鉛含量限制 (GB 24427-2009)，如下表：

The limitations of mercury, cadmium and lead in alkaline and non-alkaline manganese dioxide batteries (GB 24427-2009), as shown in the following table:

電池名稱 Battery Description	型號 Model	汞鎘鉛含量限制 Contain Limits (ug/g)			
		汞含量(Hg)		鎘含量 (Cd)	鉛含量 (Pb)
		低汞電池 Low Mercury Battery	無汞電池 No Mercury Battery		
鹼性 鋅-二氧化錳電池 Alkaline manganese dioxide batteries	LR8D425、LR1、LR03、LR6、 LR14、LR20、3LR12、4LR61、 4LR25X、4LR25-2、6LR61	/	≤ 1	≤ 20	≤ 40
非鹼性 鋅二氧化錳電池 Non-alkaline manganese dioxide batteries	R1、R03、R6P、R6S、R14P、 R14S、R20P、R20S、R40、2R10、 3R12P、3R12S、4R25X、4R25Y、 4R25-2、S4、6F22、6F100	≤ 250	≤ 1	≤ 200	≤ 2000

注：其它尚未標準化的鹼性和非鹼性鋅-二氧化錳電池可參照上述要求

五. 在台灣市場上銷售之電池需滿足以下條件

The batteries in Taiwan market must meet the following conditions

5.1 臺灣《含汞乾電池禁限用政策》內容如下：

Taiwan's New Rules on Dry Battery Registration Dry Battery Registration is dressed as following;

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5.1.1 指定電池之重金屬含量限值及適用期程如下：

指定電池項目 Item	重金屬含量限值 Contain Limits	適用期程 Time line
非鈕扣型電池 Not button cell battery	汞(Hg)含量 ≤ 5 ppm	中華民國 104 年 12 月 31 日前 Before 2015/12/31
	汞(Hg)含量 ≤ 1 ppm 鎘(Cd)含量 ≤ 20 ppm	中華民國 105 年 1 月 1 日起 Starts from 2016/1/4
鈕扣型電池 Button cell battery	汞(Hg)含量 ≤ 1 ppm 鎘(Cd)含量 ≤ 20 ppm	中華民國 106 年 1 月 1 日起 Starts from 2017/1/1

5.1.2 指定電池在包裝明顯處應標識核發的確認檔字型大小及“本產品電池汞含量符合環保署規定”的字樣，以及中央主管機關確認文件字號，標示字體長寬不得小於 0.3 公分。但商品包裝可供標示之最大面積小於 3 公分 × 4.3 公分且標示有困難者，如該商品之標示於販賣時可供辨識，得於外層包裝或陳列架標示。

Specified batteries shall be attached label to designate battery package that clearly states the phrase “This battery complies with Environmental Protection Administration regulations on mercury content”, and the confirming file document number of the central competent authority, indicating font length and width should not be less than 0.3 cm. If the maximum area of the product packaging is less than 3 cm × 4.3 cm and difficult to place the label. If the label of the product is available for identification at the time of sale, it may be marked on the outer packaging or display rack.

5.2 標識要求：Identification requirements:

需在電池及其說明書上標識“四方回收圖案”及“廢電池請回收”字樣(如圖 6)的標識。電池上的標識尺寸，每邊不得小於 0.5 cm；說明書上的標識，每邊不得小於 1.5 cm。

All batteries sold in Taiwan are required to have the “Four-in-One” recycling symbol. (See Figure 10.7). The “Four-in-One” recycling symbol must be printed in any solid color (monotone), must be square in shape with each side not smaller than 0.5 cm in package and 1.5 cm in user manuals and product literature. The recycle symbol should be placed on the battery.



廢電池請回收

Four-in-One recycling symbol for Taiwan

圖 6

Figure 6



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六. 在加拿大市場上銷售之電池需滿足以下條件

The battery in Canada market must meet the following conditions

- 6.1 加拿大有關環保法規中涉及到含汞電池的規定，提出了減少電池中用汞量的具體指標：
Canadian Environmental Law about batteries containing mercury, proposed specific targets to reduce the mercury contented in batteries:
- 6.1.1 助聽器用鋅空氣電池最大允許汞含量為 40 mg/Ah
Hearing aid zinc-air battery with the maximum allowable mercury content is 40 mg / Ah.
- 6.1.2 圓筒型電池最大允許含汞量為電池重量的 0.02%
Cylindrical battery with the maximum allowable mercury content is 0.02% of battery weight.
- 6.1.3 鈕扣或硬幣鹼性電池最大允許汞含量為每個電池不超過 25mg
Button or coin alkaline battery maximum allowable mercury content is not more than 25mg per battery.

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