

Guidelines to Environmental Battery Marking in the European Union

- These guidelines are intended as a tool to aid the battery industry with certain marking requirements in the new battery Directive No. 2006/66/EC which Member States are required to transpose into national law by 26 September 2008.
- All batteries are required to be marked, either on the battery or its packaging depending on size, with the separate collection symbol.
- Batteries containing mercury, cadmium and lead are also required to be marked with their chemical symbol(s).
- The producer placing batteries on the market is responsible for fulfilling the marking requirements in accordance to the provisions of the Battery Directive.

April 2008

Disclaimer

This document is intended to provide guidance on the marking requirements as foreseen by art. 21 of the Battery Directive. The document is not a legally binding interpretation of the Battery Directive, and should therefore not be relied upon as legal advice. This document can be updated at any time without prior notice.

1. LEGAL REQUIREMENTS

1.1 Introduction

Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators requires that all types of waste batteries and accumulators should be separately collected for recycling and that consumers should be informed about the heavy metals they contain.

NB: The term battery, or batteries, used in this document means single cells or battery packs used as individual units.

1.2 Batteries Covered by the EU Directive

1.2.1 Symbols

All batteries, accumulators and battery packs are required to be marked with the separate collection symbol (crossed-out wheeled bin) either on the battery or its packaging depending on size.

In addition batteries, accumulators, battery packs and button cells should include the chemical symbol Hg when containing more than 0,0005% mercury, the chemical symbol Cd when containing more than 0,002% cadmium, the chemical symbol Pb when containing more than 0,004% lead. If the content is higher for more than one of the substances in question, all relevant chemical symbols have to be placed.

The symbols can be placed on the existing colour background as long as they are visible, legible and indelible. The symbols can be attached as labels, by durable printing, or as a surface profile, either indented or as relief.

1.3 Marking Dimensions – Separate Collection Symbol

1.3.1 On Batteries

Prismatic shapes: The symbol; shall cover at least 3% of the area of the largest side of the battery, accumulator or battery pack, up to a maximum size of 5x5 cm. The symbol may be marked on any side.



Cylindrical shapes: The symbol shall cover at least 1.5% of the battery surface area to a maximum of 5cm x 5cm.

1.3.2 On Packaging

Where the size of the battery, accumulator or battery pack is such that the symbol would be smaller than 0.5cm x 0.5cm, the battery, accumulator or battery pack need not be marked but a symbol measuring 1cm x 1 cm shall be printed on the consumer packaging.

1.4 Marking Dimensions – Chemical Symbol

Irrespective of whether the separate collection symbol is on the product or on the packaging, the chemical symbol Cd, Hg or Pb must be placed beneath the separate collection symbol and be at least one quarter of the area of that symbol.

Detailed dimensions of the symbols are available in the annex.

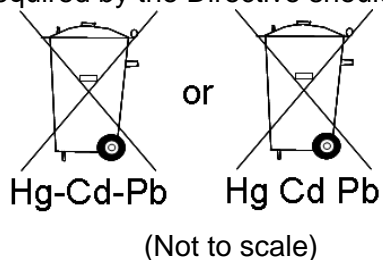
2. INDUSTRY STANDARDS

2.1 Introduction

The following recommendations have been developed by the EPBA in cooperation with RECHARGE and EICTA to promote a standardised approach on marking related issues that are not clearly defined in Directive 2006/66/EC. Use of these standards are therefore entirely voluntary and at the discretion of the “producer”.

2.2 Multiple Chemical Symbols

In those cases where it is necessary to include more than one chemical symbol the format should be as indicated below. Dimensions of the separate collection symbol and the chemical symbols as required by the Directive should be followed.



2.3 Button Cells

The dimensions of a very limited number of button cell batteries are such that the separate collection symbol should be marked on the cell according to a strict reading of the Directive’s marking requirements in Art. 21.4.

However this is not an effective method for informing consumers about separate collection for the following reasons:

- a. Button cells do not have a label on which the symbol could be printed since both its ends are designed to act as electrical contacts. Application of any substances such as inks, etc could insulate the contact between the battery and the appliance into which it is placed causing malfunction. As a result the symbol would have to be engraved into the metal and this would not be easily visible to the consumer and be contrary to Art. 21.6 of the Directive.
- b. According to the IEC standards button cells should display the following information on cell because of safety, performance and product liability issues:
 - polarity "+" and "-" symbols (safety),
 - chemistry and voltage (performance/fit for purpose),
 - brand name (product liability).

As a result the available space for the separate collection symbol is restricted.

Placing the separate collection symbol, measuring 1cm x 1cm, on the packaging of all button cells will provide consumers with information about their proper disposal visibly, legibly and indelibly.

2.4 Battery Packs

Directive 2006/66 defines 'battery pack' as "any set of batteries or accumulators that are connected together and/or encapsulated within an outer casing so as to form a complete unit that the end user is not intended to split up or open."

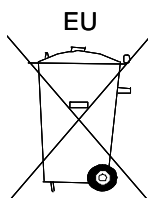
Art. 21.1 includes battery packs together with batteries and accumulators that have to be appropriately marked with the separate collection symbol. Since end users are not intended to come into contact with batteries inside a pack it is not necessary to place the separate collection mark upon them but instead to mark the pack according to the Directive's requirements noted in section 1 above.

2.5 Qualification of Separate Collection Symbol

The following recommendations have been developed for those producers wishing to advise non-EU markets that the separate collection symbol is relevant in the EU only.

- Location of the qualifier should be outside the boundaries of the symbol.
- Preferably the qualifier should be on top of the symbol. It should not be below because Directive 2006/66 reserves that space for chemical symbols.

- The qualifier could be used with the symbol either on battery label or on the battery's packaging.
- The recommended qualifier is EU as shown in the following illustration:



2.6 Batteries Incorporated into Appliances

Art. 11 of Directive 2006/66 requires that “manufacturers design appliances in such a way that waste batteries and accumulators can be readily removed.” However this requirement does not apply where “for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.” Finally the Directive requires “appliances into which batteries and accumulators are incorporated shall be accompanied by instructions showing how they can be removed safely.”

2.6.1 Applications Exempted from Ready Removability

Batteries incorporated into appliances that are exempted from “readily removed” requirement of the Directive for safety, performance, medical or data integrity reasons, need not be marked with the separate collection and chemical symbols since end users are not expected to dispose of the battery separately from the appliance. Such batteries would be separated from the appliance during the treatment phase of the appliance as required under the WEEE Directive. In particular, this exemption should apply to button cells, memory back-up batteries and battery packs when those batteries/packs are supplied embedded (*) in the equipment.

(*) where embedded means “not intended for replacement by the end user”.

2.6.2 Applications Designed for Ready Removability

Marking of the separate collection and chemical symbols for batteries and accumulators that can be “readily removed” shall be as follows:

- Where the size of the battery or accumulator is such that following the symbol size conditions noted under 1.3.1 above the symbol would not be smaller than 0.5 cm x 0.5 cm, symbol(s) should be placed on the battery or accumulator.

- Where the size of the battery or accumulator is such that the symbol would be smaller than 0.5cm x 0.5cm, the battery or accumulator should not be marked but a symbol measuring 1cm x 1 cm shall be printed either: 1) on the packaging of the appliance; 2) inside the instructions/manual.

2.6.3 Instructions for Ready Removability

The Directive requires that instructions for safe removal of batteries should be incorporated within its instructions for use. Instructions may be made available to the consumer on a separate leaflet or printed on the packaging.

For further general information on marking guidelines, please contact:

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ANNEX

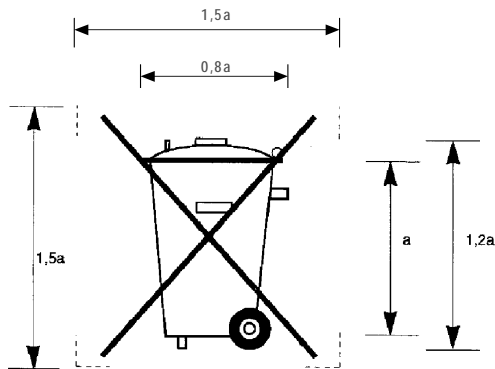
**MARKING DIMENSIONS ACCORDING TO EN 61429 AND EXAMPLES FOR
SPECIFIC BATTERY SIZES**

The following table has been derived using formula: $a \geq 0.12 \sqrt{A}$

a = nominal symbol dimension
A = half battery curved surface
area (cylindrical) or area
of largest side (prismatic)

| Battery Size | | Minimal "a" (in millimetres) | With chemical symbol (1,5a x 2a) | Without chemical symbol (1,5a x 1,5a) |
|--------------|-----------------|---------------------------------|--|--|
| <i>ANSI</i> | <i>IEC code</i> | | May be horizontally extended to banderole shape (in millimeters) | May be horizontally extended to banderole shape (in millimeters) |
| AA | R6 | 4,1 | 6,1 x 8,1 | 6,1 x 6,1 |
| 6F22 | 6LR61 | 4,0 | 6,0 x 8,0 | 6,0 x 8,0 |
| C | R14 | 5,4 | 8,2 x 10,9 | 8,2 x 8,2 |
| D | R20 | 6,9 | 10,3 x 13,8 | 10,3 x 10,3 |

Separate collection marking without chemical symbol



Separate collection marking with chemical symbol

