Chemical restrictions and labelling of batteries

Substance restrictions and chemical symbol marking requirements from the UK 2008 regulations are listed in the table below.

Substance	Restrictions	Marking required (all batteries)
Mercury	0.0005% except button cells limit is 0.2%	Hg if > 0.0005%
Cadmium	0.002% in portable batteries*	Cd if > 0.002%
Lead	None	Pb if > 0.004%

* Exemptions from the cadmium restriction apply to medical applications, power tools and emergency and alarm systems including lighting.

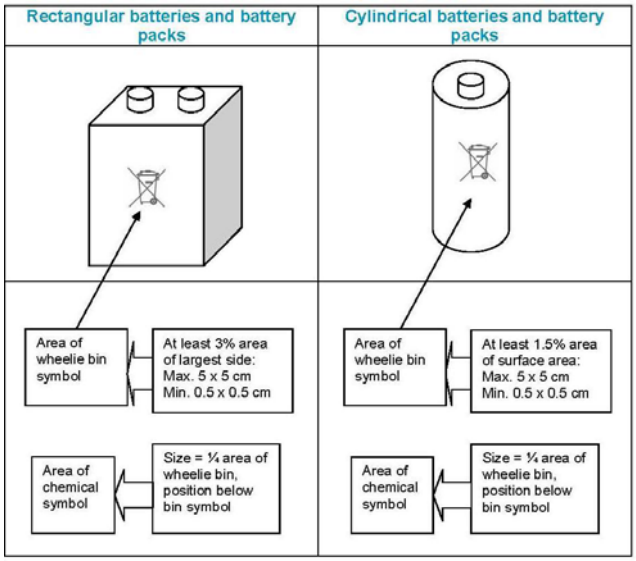
The concentrations above are percent by weight of the battery or battery pack.

Note that batteries in vehicles covered by the ELV directive are excluded as these have different restrictions. Cadmium is also permitted in industrial batteries although they need to be marked as above.

Marking batteries

All batteries must be marked with the crossed wheelie bin symbol unless there is insufficient space for a symbol of at least 0.5 x 0.5 cm. If there is not enough space then mark the packaging instead with symbol of at least 1 x 1 cm.

Also mark batteries (beneath the wheelie bin symbol) with chemical symbols if required (see previous table) – the chemical symbols must be marked on the battery even if there is insufficient space for the wheelie bin symbol as shown below.



Battery packs

Battery pack marking is the same as for batteries sold individually. However, the individual cells within battery packs do not need to be marked as users are not intended to separate cells of packs.

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Battery capacity marking

Capacity marking is a requirement but the European Commission is late publishing the method for capacity marking. The method for portable and automotive secondary (rechargeable) batteries has been proposed and accepted but not yet published. This will enter force 18 months after publication which should be in the next few months.

The methods are from the following standards:

- NiCd portable — IEC/EN 61951-1 and IEC/EN 60622
- NiMH portable — IEC/EN 61951-2
- Lithium portable — IEC/EN 61960
- Lead acid portable — IEC/EN 61056-1.
- Lead acid automotive — IEC 60095-1/EN 50342-1.

The battery capacity label should include:

- Portable NiCd, NiMH and Li batteries except in power tools - rated capacity as an integer expressed as mAh
- Portable NiCd, NiMH and Li batteries for power tools – rated capacity as a decimal number with one digit if expressed as Ah or as an integer if expressed as mAh
- Portable lead acid batteries - rated capacity as a decimal number with one digit if expressed as Ah except for power tool applications
- Lead acid automotive batteries capacity displayed as an integer with accuracy ±10% expressed in “Ampere hour(s)” (Ah) and “Cold Cranking Amperes” (A), using both these abbreviations.

There are no details yet of capacity marking requirements for non-rechargeable batteries.

Minimum sizes of capacity labels

On batteries 1.0 x 5.0 mm and also on the front of packaging 5.0 x 12.0 mm (if packaging is not used then only on the battery)

On battery packs on external surfaces, not on individual cells
Largest side = <70cm2 label = 1.0 x 5.0 mm.
Largest side = >70cm2 label = 2.0 x 5.0 mm

On packaging if insufficient space on battery or pack = 5.0 x 12.0 mm.

Button cells and memory back-up cells = 5.0 x 12.0 mm on the front of the packaging

Automotive lead acid batteries = at least 3% of area of largest side and maximum 20 x 150 mm. Label on any one of the sides except the base.

Exemption on NiCd batteries in power tools

The exemption that allows the use of NiCd batteries in power tools is being reviewed by the Commission. They have funded a study into whether this exemption could be removed and the final report was completed in January 2010. The consultants concluded that overall, the exemption should be removed but the Commission has not yet taken any action. This does not affect NiCd industrial batteries where no restrictions apply.

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