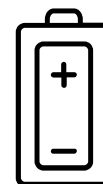




# RECOMMENDATIONS FOR BATTERIES AND RECHARGEABLE BATTERIES



## Selecting the right batteries

- Avoid in any case Ni-Cd batteries. The heavy metal cadmium(cd) can cause extremely serious health problems and can be hazardous for the environment.
- As rechargeable NiMH batteries have a long life expectancy, are extremely durable and possess high energy content they are particularly suitable for energy-intensive applications which additionally require a high flow of electricity (e.g. cameras, flashes, etc.).
- Li-ion batteries possess high energy density, short charging times and little weight. They require special charging techniques and are used especially for notebooks, cell phones and camcorders.
- In pocket torches and remote controls, one-time use batteries should be used. As this equipment has no device to prevent exhaustive discharge it is recommended not to use rechargeable batteries.

### Designation of the most common sizes of rechargeable and non-rechargeable batteries

General designation	ANSI standard	IEC designation*	Mass
Micro	AAA	LR 03	ø 10,5 mm x 44,5 mm
Mignon	AA	LR 6	ø 14,5 mm x 50,5 mm
Baby	C	LR 14	ø 26,2 mm x 50,0 mm
Mono	D	LR 20	ø 34,2 mm x 61,5 mm
9 V-Block	1604 D	6 LR 61	ø 26,5 mm x 17,5 mm x 48,5 mm

\* The combinations of letters in front of the numbers in the IEC designation additionally indicate the chemical system of the rechargeable or non-rechargeable battery. Examples are:

- „LR“ stands for alkaline manganese batteries
- „R“ stands for zinc-carbon batteries
- „HR“ stands for nickel metal hydride rechargeable batteries





## Correct use of the rechargeable batteries

- Basically, you should first charge rechargeable batteries before using them for the first time, including those already charged because the latter are never fully charged.
- Rechargeable batteries should be stored cool and dry so that their life expectancy is not negatively affected. In addition, they should be shielded from direct sunlight. A rule of thumb says that a drop of 10°C in temperature halves auto-discharge and thus doubles potential shelf life. Auto-discharge means that the usable capacity declines although the batteries are not being used.
- Only use rechargeable batteries with the same capacity (e.g. 800 mAh).
- Rechargeable batteries with high capacity (2600 mAh and more) are only recommended for equipment with high energy requirements and with particularly intensive applications. Increased capacity reduces the number of possible charge cycles declines, and thus the life expectancy of the batteries.
- Rechargeable batteries with different systems or capacities or from different manufacturers should never be used together. Likewise risky is using rechargeable batteries with different charge levels. Through their interaction, where the weakest rechargeable battery reduces the total output of all batteries, capacity loss may result and in the worst case may entail an auto-discharge that can ruin the battery.
- Discharged batteries should not be left for a longer period of time in equipment that is turned on. This can result in auto-discharge which in turn may make recharging the rechargeable battery impossible.
- In general, rechargeable batteries that are not used for a longer period of time should also be stored outside of the equipment, and preferably in charged condition. Even in turned-off equipment a minor amount of electricity can flow which promotes auto-discharge of the battery and, in the worst case, can lead to auto-discharge.
- Batteries and rechargeable batteries should never be burned, short-circuited or opened with force.
- Do not expose rechargeable or non-rechargeable lithium batteries to any greater amount of heat or water. This could result in violent reactions, including even combustion or explosion.



## Selecting the right charger

- Pay attention to good quality in chargers: inverse-polarity protection, automatic charging current function, charge level indicator with fully charged or defective rechargeable batteries, timer, overcharge indicator, etc.
- In addition, the charger should be designed so that separate charging of rechargeable batteries is possible.

## Environmentally friendly disposal and avoidance

- By using rechargeable batteries correctly you can save a lot on non-rechargeable batteries and save money. A rechargeable battery may replace up to 1,000 non-rechargeable batteries, equivalent to about 25 kg.
- Empty batteries and rechargeable batteries that can no longer be recharged should in any case be disposed of as problem waste and not thrown into residual waste. **SuperDrecksKëscht®** will be happy, as an agent of EcoBatteries, to accept your old rechargeable and non-rechargeable batteries of all kinds, whether at the recycling center or at the mobile collection. In addition, many supermarkets and electric specialist suppliers have disposal receptacles in their shops where you can throw in your rechargeable and non-rechargeable batteries.
- Do not touch run-down batteries with bare hands. Leaked electrolytes generally consist of acid or alkaline that can be injurious to health. Should you come into contact with leaked components then wash your hands thoroughly. Leaked electrolytes should best be wiped off with a moist cloth.
- A supposedly empty battery such as from a camera (with a high final discharging voltage) can find a „second“ life in a watch or remote control (with low final discharge voltage) and in that way use up the residual capacity still left.

The choice of the right rechargeable batteries and chargers depends on many factors such as the frequency of the charge cycle, where the battery is used, etc.

Ask for advice in a specialist shop. You will find a list of the businesses taking part in the „Shop Green“ campaign at [www.shop-green.lu](http://www.shop-green.lu).

General usage recommendations

	Disposable batteries	Nickel metal hydride rechargeable batteries (NiMH)
Camera	I	III
Flash	I	III
Telephone		III
Electronic toy	I	III
Watch	III	I
Remote control	III	II
Remote control (e.g. for kids' cars)		I
Simple toy	II	I
Pocket torch	III	II
I	suitable	
II	recommendable	
III	highly recommendable	