

Disposable vs. rechargeable batteries

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Rechargeable and disposable batteries - the environmental impact

I wouldn't call myself a gadget freak, but in my work and given I spend a good deal of time away from a mains power supply, I use a lot of battery powered equipment. I started using rechargeables some years back and it's definitely saved me a lot of cash.

But what about the environment?

I guess it's a bit of a no-brainer that if you use one of something compared to a zillion, it's got to be better for the planet, but not if the one of something is one zillion and one times toxic :). So I decided to take a look at how rechargeable batteries stack up against their disposable counterparts.

Disposable and rechargeable battery types

Disposable, or dry-cell batteries are usually the alkaline type. They used to contain very high levels of mercury, but the amounts used have greatly decreased over the last couple of decades and some brands use none at all. Still, many do contain a small amount of mercury and given the massive waste involved should be avoided, or at the very least, recycled. In 2006, 40 billion disposable batteries were sold worldwide! According to the EPA, Americans purchase nearly 3 billion dry-cell disposable batteries every year.

Unfortunately, it can be difficult finding places that will actually recycle disposable alkaline batteries. Many recyclers separate them from rechargeables and they do wind up in landfill anyway.

A service I came across in the USA for alkaline (and rechargeable) battery recycling is Big Green Box, which is just a box you can dump batteries into and when it's full, send it back to the recycler. You can purchase a box for your home or office, or utilize one that's in one of the participating stores mentioned on their site.

Button batteries are a problem as a great deal of metal is used for their comparatively small size and they can contain mercury, silver, cadmium, lithium, or other heavy metals as their main component. Thankfully, due to the increasing price of raw materials, these are a desired recyclable item.

Rechargeable batteries used to be quite environmentally toxic beasts, containing cadmium (NiCad batteries). These days the most commonly sold batteries are Nickel-metal-hydride (NiMH). NiMH batteries have a better life and performance than Nicads and don't contain as toxic heavy metals, so they are a "greener" choice.

If you own a notebook, it's likely the battery in it is Lithium-ion. These are the top of the line in terms of performance and the type we'll see in cars of the future. Again, a more environmentally friendly option than NiCads.

You can also buy rechargeable alkaline batteries, but these perform poorly and will cost you more in the long run - and you'll create more waste.

Regardless of the lower environmental toxicity of today's rechargeable batteries, they should definitely be recycled rather than thrown in the bin to wind up in landfill.

Where to recycle rechargeable batteries

If you're in the USA or Canada, try Call2Recycle, the Rechargeable Battery Recycling Corporation (RBRC) program's web site for further information.

In Australia, BatteryWorld stores offer a free service.

In the UK, there's a free recycling program called BatteryBack

Environmental savings

According to a study by Uniross carried out in 2007, the production of rechargeable batteries have the following advantages over disposables (comparing serviceable life):

- 23 times less potential impact on non-renewable natural resources

- 28 times less potential impact on global warming
- 30 times less potential impact on air pollution (ozone pollution)
- 9 times less potential impact on air acidification
- 2 times less potential impact on water pollution

Getting the most from rechargeable batteries

I made a few mistakes using rechargeable batteries in the beginning, so I offer the following tips so you might avoid the same. These simple tips will help ensure you get the maximum life from your rechargeables

- If you're going to buy rechargeables - keep track of them :). Being small critters, batteries are easier to lose. Given that a rechargeable battery in itself is more toxic to the environment than a single disposable alkaline; if you keep losing them and keep buying more, it defeats the purpose. Have a central point in the house or your car where you store flat ones. I also mark each battery set (eg. mb1, mb2, mb3, mb4) so there's equal 'wear', rather than mixing old ones with new ones.

- Avoid using the batteries at high temperatures and store out of direct sunlight

- Recharge regularly

- Avoid overcharging the rechargeable battery

Cost savings

As mentioned, you can not only lighten your environmental footprint, but save a ton of cash by using rechargeable batteries.

A pack of 4 rechargeable batteries I purchased a short while ago cost me around \$20. They'll be good for at least 500 recharges, likely more. A battery charger costs anywhere from about \$10 - \$30. The cost to recharge the set works out to be just a couple of cents each time. So, in total, even factoring in the charger, a set of 4 AA will cost around \$50 for their serviceable life.

A comparable set of heavy duty disposables cost around \$2 - and that's at a discount price. The equivalent usage would cost \$1000!

Environmentally and financially, rechargeable batteries just make more sense. If you can, try ditching your disposable battery habit and reap the rewards.

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