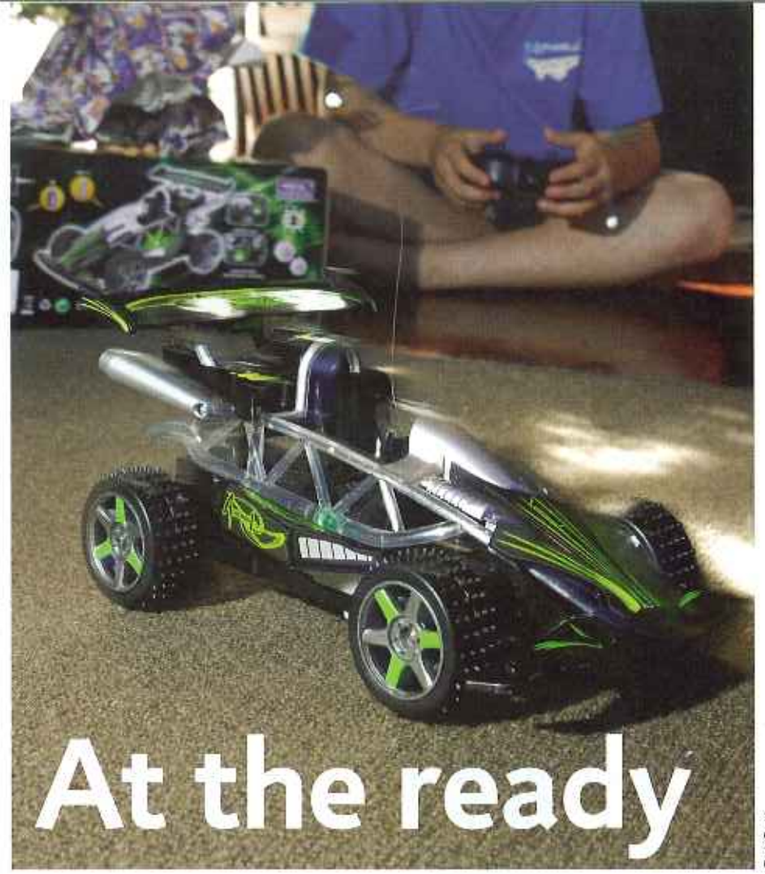
At the ready

The best rechargeable batteries can now be used straight from the pack – and hold their charge when not being used.



Chris Coad

TEST: LIBBY MANLEY

The top-performing rechargeable batteries in our test were the new "ready-to-use" ones. These combine the convenience of disposable batteries with the advantages of standard rechargeable batteries (they can be reused and cost you less in the long run).

We put 15 rechargeable batteries through a particularly tough test. We charged the batteries, then ran them flat. And we did this repeatedly – 200 times or until they stopped working (whichever happened first).

This is similar to constantly using them in a kid's remote-controlled car. It's possible some batteries in our test will last longer under a lighter load.

We also tested the batteries for "self-discharge" – how well they kept their charge when not being used. That's handy for digital cameras which aren't frequently used.

About our test

All batteries were AA-size nickel-metal hydride (NiMH) rechargeable batteries with a rated capacity of at least 2000 milliamp-hours (mAh).

Endurance: is calculated on the average battery life per cycle and on the number of cycles completed before capacity dropped to less than half that measured at the start of testing.

Consistency: is calculated on the loss of capacity between the first and 200th (or last) cycle of charging and discharging. Batteries with high consistency scores stayed close to their original capacity after 200 cycles of charging and discharging.

Self-discharge: is calculated on the loss of capacity over three months of no use.

What we found

There were distinct differences in performance between the ready-to-use batteries and standard rechargeables.

Four of the five recommended products are ready-to-use batteries: **Varta Ready2Use, Uniross Hybrio Ready to Use, Sanyo Eneloop Ready to Use,** and **Panasonic Ready to Use.** These batteries performed very well overall, were still recharging after 200 uses, and held their charge when not being used. They also achieved excellent scores for consistency – there was very little difference in their capacity between their first and last use.

All batteries had an average battery life of at least 100 minutes. The longest-running batteries were high-capacity standard rechargeables – the **Duracell Rechargeable 2650mAh** and **Uniross Rechargeable 2700mAh.** But these batteries couldn't be re-used as often as the lower-capacity ready-to-use batteries.

Tip: Batteries tend to self-discharge faster at higher temperatures. Keeping them cool can help – but never keep them in the fridge or freezer.

Price

The batteries in our test cost around $10 to $20 for a two-pack and $20 to $45 for a four-pack. You can also buy packs that include a charger. These can cost anywhere from $20 to $100, depending on the brand and the number of batteries.

Rechargeable batteries cost more than disposable batteries initially but can be used many times. The best batteries last at least 200 uses, so it's not long before they've paid for themselves.

What's a milliamp-hour (mAh)?

Battery capacity is measured in milliamp-hours (mAh). For rechargeable batteries, this is a measure of how long a battery will last before needing to be recharged. The higher its mAh rating, the longer it should last.

For example, a 1500mAh battery should last for six hours in a gadget using 250 milliamp-hours while a 2000mAh battery could be expected to last eight hours in the same gadget.

For instance, an equivalent disposable battery (Energizer) will cost $8 to $10 for a four-pack and can only be used once.

Availability

You won't find most of our recommended batteries at the supermarket. Check "We recommend" for the best places to look for them.

Re- to the max

For gadgets and appliances you use often, **rechargeable** batteries are your best bet. They're cheaper in the long run, perform very well, and because you can **re-use** them they're better for the environment (you're not constantly throwing away disposables).

Once your batteries – rechargeable or otherwise – have reached the end of their life they can be **recycled** or disposed of safely. Sony stores accept any brand of batteries. Some councils collect batteries for recycling overseas or for environmentally safe disposal. (Unfortunately, most batteries can't be recycled here.) Contact your local council to find out about collection services in your area.

MORE INFO »

Worth looking at:

+DIGITAL CAMERAS *Consumer 486*
+DIGITAL CAMCORDERS *Consumer 486*

On our website:

Online subscribers only
+DIGITAL CAMERAS
+DIGITAL CAMCORDERS
consumer.org.nz

WE RECOMMEND

BEST IN TEST

VARTA READY2USE
Price: $24.92 (4-pack)
GOOD POINTS: Best overall score. Longest average battery life for a ready-to-use rechargeable. Excellent consistency score. Good endurance and self-discharge scores. Can be re-used at least 200 times.
BUT: (No obvious bad points.)
AVAILABILITY: Available from Bunnings, Harvey Norman and Dick Smith stores.

UNIROSS HYBRIO READY TO USE
Price: $14.99 (2-pack)
GOOD POINTS: Equal-second-best overall score. Excellent consistency score. Very good self-discharge score. Good endurance score. Can be re-used at least 200 times.
BUT: (No obvious bad points.)
AVAILABILITY: Available from PhotoWarehouse stores or from www.photowarehouse.co.nz.

SANYO ENELOOP READY TO USE
Price: $12.00 (2-pack)
GOOD POINTS: Equal-second-best overall score. Best consistency score. Very good self-discharge score. Good endurance score. Can be re-used at least 200 times.
BUT: (No obvious bad points.)
AVAILABILITY: Try online battery retailers www.celltown.co.nz or www.newbattery.co.nz.

PANASONIC READY TO USE
Price: $15.99 (2-pack)
GOOD POINTS: Excellent consistency score. Good endurance and self-discharge scores. Can be re-used at least 200 times.
BUT: (No obvious bad points.)
AVAILABILITY: Available from Foodtown and Woolworths supermarkets nationwide or from www.woolworths.co.nz or www.foodtown.co.nz.

DURACELL RECHARGEABLE 2650mAh
Price: $19.99 (2-pack)
GOOD POINTS: Best non-ready-to-use rechargeable. Long average battery life. Good endurance, self-discharge and consistency scores.
BUT: Lasted only 133 uses.
AVAILABILITY: Try Kmart stores or online battery retailer www.celltown.co.nz.

MODELS	$ PRICE (2-PACK)	$ PRICE (4-PACK)	% OVERALL SCORE	OUT OF 10 ENDURANCE	OUT OF 10 CONSISTENCY	OUT OF 10 SELF-DISCHARGE	TECHNICAL BITS AVERAGE BATTERY LIFE (MIN)	TECHNICAL BITS FAILURE CYCLE	TECHNICAL BITS RATED CAPACITY (mAh)	TECHNICAL BITS READY-TO-USE
✓ Varta Ready2Use *(China)*	-	24.92	84	7.9	9.7	7.3	120	200+	2100	●
✓ Uniross Hybrio Ready to Use *(China)*[A]	14.99	24.95	83	7.6	9.7	8.1	116	200+	2100	●
✓ Sanyo Eneloop Ready to Use *(Japan)*	12.00	20.00	83	7.4	10	8.7	114	200+	2000	●
✓ Panasonic Ready to Use *(China)*	15.99	-	82	7.7	9.5	7.7	118	200+	2100	●
Camelion Always Ready *(China)*[A]	-	28.28	79	7.4	9.5	5.7	114	200+	2100	●
✓ Duracell Rechargeable 2650mAh *(Japan)*[A]	19.99	-	77	7.7	7.6	7.5	146	133	2650	
Sony Rechargeable Cycle Energy *(Japan)*	14.99	24.44	75	7.9	6.8	7.6	135	157	2500	
Uniross Rechargeable 2700mAh *(China)*[A]	14.95	-	72	6.9	7.7	7.1	149	98	2700	
Panasonic Rechargeable 2600 *(China)*	13.89	-	66	7.7	4.7	5.8	132	155	2600	
Eveready Rechargeable *(China)*	10.99	21.15	65	6.6	6.4	6.5	102	200+	2000	
Energizer Rechargeable 2500 *(Japan)*[A]	13.80	26.30	64	6.9	5.2	6.8	134	121	2500	
DSE NiMH 2500mAh *(China)*	-	19.99	63	6.1	5.9	8.5	138	66	2500	
Plus +Energy *(China)*[A]	-	19.99	58	5.8	4.8	8.5	105	177	2700	
Kodak Digital Camera Battery *(China)*[A]	19.90	45.00	52	6.5	4.1	1.0	129	124	2500	
Camelion High Energy 2700 *(China)*[A]	-	25.25	45	4.4	3.7	7.2	114	79	2700	

GUIDE TO THE TABLE OUR TEST was carried out by an independent laboratory in New Zealand. **MODELS** [A] limited availability. **PRICE** is based on a survey in Auckland, Wellington and Christchurch in October 2008. **SCORES OUT OF 10 Endurance** (60% of overall score). **Consistency** (30%). **Self-discharge** (10%). **TECHNICAL BITS Average battery life** is the average number of minutes it took for the battery to go flat. **Failure cycle** is the number of cycles completed before battery capacity dropped to less than half of its initial capacity.