

Ink cartridges

NEED TO KNOW

Generic inkjet cartridges look the same as cartridges made by printer manufacturers but are often considerably cheaper (for example, you could save nearly £100 over three years). However, generic cartridges don't always provide the same printing quality as branded ones.

TYPES OF CARTRIDGE

There are two types of generic cartridge: brand new cartridges that are compatible with a particular printer, and remanufactured ones, which are empty cartridges that have been collected and refilled.

WARRANTIES

We asked the major printer manufacturers whether using a generic cartridge would invalidate their warranties. They all said that simply fitting one isn't a problem, but that any damage caused to a printer or by ink spills as a result of using a generic cartridge was unlikely to be covered. None of our Best Buy generics caused problems during testing but, if you're worried about your printer's warranty, you might want to stick with own-brand ink until it expires.

DIY REFILLS

Refill kits allow you to fill empty cartridges at home. Our experts recommend you avoid them because the process is often messy and unsuccessful, and can ruin the cartridges.



BEST ON TEST

BEST BUY

BEST BUYS

The printer manufacturers' own cartridges produce excellent print-outs of text, graphs and photos, making them all Best Buys. Our Best Buy generic cartridges also do well compared with the own-brand cartridges. They didn't fail during testing or damage the printer, and the prints aren't affected by prolonged exposure to sunlight.

Non-Best Buys either didn't work or were not flexible enough to print both quality office documents and photos.

CANON

The **Canon (1)** cartridges, £20.98 online, printed complex colours and detail in photos of faces and landscapes with ease. These cartridges release just enough ink to ensure that shading, layering and fine lines of charts and graphs are clear and precise.

An acceptable alternative is **Ink Again (2)**, £13.74 online. The print quality is fine for text, tables and graphs, apart from occasional blurring of lines and small amounts of dotted shading.

Photo prints are 46 per cent cheaper than those from Canon cartridges and – despite a slight green tint – are easy on the eye.

EPSON

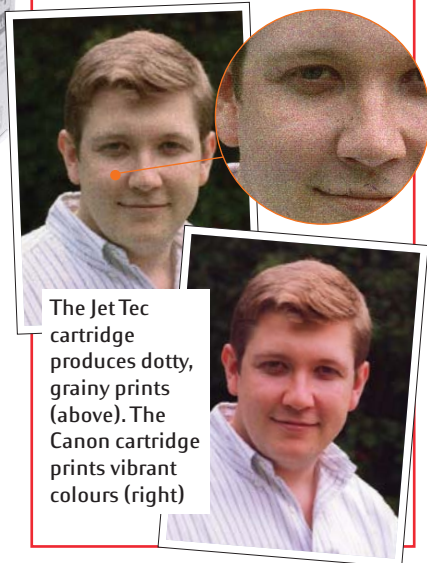
Like other printer makers' cartridges, those from **Epson (6)**, £39.35 online, produce fantastic prints of text, charts, tables and natural-looking photos. The **Print-Rite (7)** cartridges, £11.32 online, match the clearly-defined text, shaded tables and graphs printed by Epson's cartridges. Our only criticism is that there's slightly too much contrast in the photos, which can make dark colours look unnatural and lighter tones appear washed out.

HP

The cartridges produced by **HP (11)**, £30 online, excel at all printing tasks, significantly outshining generic cartridges for its printers. They're also not much dearer over three years than the third-party

PHOTO PRINTS

The best photos are printed by this Canon (1) and the Epson (6), HP (11) and Lexmark (13) cartridges. The photos are lifelike and full of depth and colour. Subtle skin tones are reproduced, the finish is smooth and they are not dominated by green, blue or red tints. Compare this with the poor print from the Jet Tec (16), which looks grainy and washed out.



The Jet Tec cartridge produces dotted, grainy prints (above). The Canon cartridge prints vibrant colours (right)

Print heads

The print head is like a very fine sieve through which ink must pass before hitting the page. A clogged head, like the one we found on the Jet Tec (16), produces streaks or random dotting.

Cartridges for some brands, such as this pictured HP (11), have part of the print head built into them, making it harder to produce matching generics. Third-party cartridges for them are mainly refilled own-brand ones.

If cartridges are reused several times they become prone to problems with blocked print heads.



INK CARTRIDGES

ones we tested, especially if you print photos regularly.

LEXMARK

They're the most expensive to use, but the **Lexmark (13)** cartridges, £52.94 online, provide excellent quality. The graphs, tables and photos are the best to roll off our Lexmark printer. A slight drawback is that photos tend to fade or change colour after prolonged exposure to sunlight.

If you print text, you can halve your printing costs per page by using the Nukote (14) cartridges, exclusive to Asda online at £34.15. They also produce good-quality photos that are less affected by sunlight than those printed by the Lexmark cartridges. The only reason they're not a Best Buy is because a couple of cartridges didn't work during testing, and printing photos is pricier than with the own-brand cartridge.

DON'T BUY

One set of generic Lexmark-compatible cartridges, the **Jet Tec (16)**, failed during the test and produced very disappointing prints. They deliver dotty and grainy prints that appear unfinished. Photos produced with these cartridges are also highly pixellated and have an offputting green tint.



BEST ON TEST

6 Epson
EPSON STYLUS C66 PRINTER



BEST BUY

7 Print-Rite
EPSON STYLUS C66 PRINTER



BEST ON TEST

11 HP
HP DESKJET 3845 PRINTER

BEST ON TEST



DON'T BUY

16 Jet Tec
LEXMARK Z515 PRINTER

Running costs

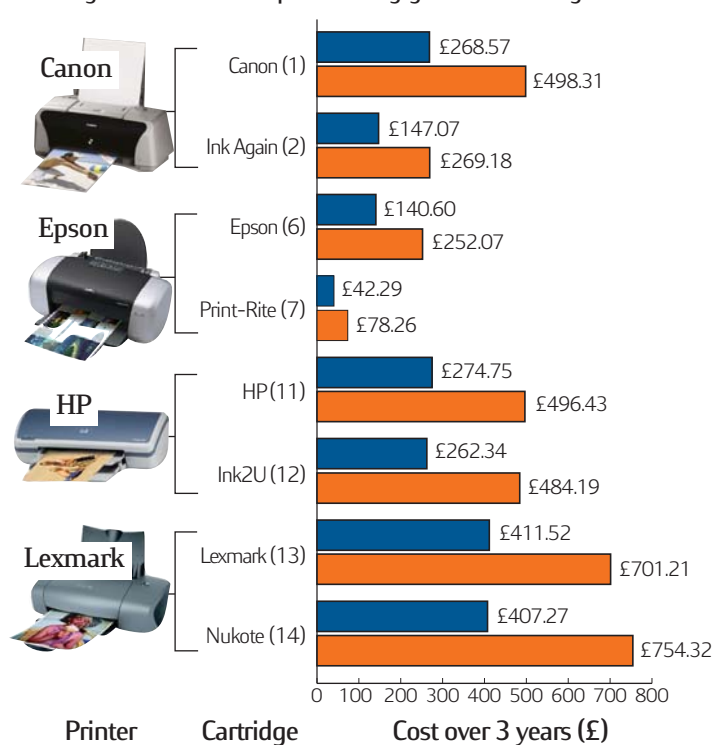
It's easy to find a cheap printer these days but keeping it in ink is costly. The Lexmark Z515 printer costs under £50, but printing a couple of photos and four text pages each week for three years would cost more than £700. So you're better off ditching the poorly-performing Lexmark for one of our Best Buy printers (see p46).

The ink for the Epson C66, however, is the cheapest. This printer uses separate cartridges for each colour rather than one cartridge for all of them, so when one colour runs out you don't have to replace them all. Using generics can save on

running costs for all the printers we tested (see graph right) and the differences in quality aren't always big. The biggest saving – 70 per cent – can be made by using generics in the Epson C66.

We think it's wrong that the own-brand inks continue to be outrageously expensive and we want printer manufacturers to work harder to drive down the cost of cartridges. You can help accelerate this process by buying one of our Best Buy generics and switching to printer brands with lower running costs, such as Epson and Canon.

The chart below shows the running costs over three years for four different printers, using the printer manufacturers' own cartridges and the best-performing generic cartridges



KEY ■ Cost of printing 1 photo and 4 text pages a week for 3 years
 ■ Cost of printing 2 photos and 4 text pages a week for 3 years



Reliability

As a rule of thumb, the printer manufacturers' own cartridges set the yardstick for reliability and printing quality. They rarely go wrong or fail to produce the goods. The same can't always be said for third-party cartridges, though.

For example, the Jet Tec generic cartridges for the Canon, Epson and Lexmark printers needed replacements either because they wouldn't print any pages or stopped working before they should have. But by far the worst offender was the

Cartridge Save remanufactured cartridges for the Lexmark Z515. Five cartridges out of ten that we tried didn't print any pages and we couldn't even complete the tests. Cartridge Save told us that remanufactured cartridges will always have a higher failure rate than other types of cartridge because they're stripped down, cleaned, rebuilt and refilled. It added that it has recently switched from suppliers which produce cartridges with a high failure rate.



13 Lexmark

LEXMARK Z515 PRINTER

USING THE TABLE

We tested sets of generic cartridges that are compatible with mid-range Canon, Epson, HP and Lexmark inkjet printers. Only complete sets of black and colour cartridges from each brand were used. Each printer manufacturer uses a different cartridge design, so you can't, for example, directly compare HP's cartridges with ones from Lexmark.

Specification

Price We give a guide to the price you can expect to pay online for a set of black and coloured cartridges. Online prices are in *italics*. **Type** OEM is a cartridge made by the printer manufacturer. Generic is a cartridge made by a third party. RM is a remanufactured cartridge, which is a previously-used cartridge refilled by a third party.

Print quality

Office tools Quality of text, graphs and spreadsheets printed from Microsoft Office applications. **Photos** Quality of photos using Photoshop on paper advised by the printer manufacturer and on Kodak paper. **Ageing** How badly prints faded when exposed to sunlight over several weeks.

Pages

Number How many pages of text and photos the cartridge printed before quality dropped. ★ means a cartridge printed the most pages; ● means a cartridge printed the fewest pages.

Print costs

Black text Cost of a page of black text. **Photo** Cost of an A4 colour photo. **Three years** Cost of printing one photo and four text pages a week for three years.

KEY

★ Best ☆ ○ ● ● Worst

■ Best Buy ■ Don't Buy

SCORE

This ignores price. If some cartridges failed during testing, the total score was capped.

Print quality 60%
Pages 40%

Ink cartridges	Specification		Print quality			Pages	Print costs			Score
	Price (£)	Type	Office tools	Photos	Ageing	Number	Black text (£)	Photo (£)	Three years (£)	(%)
CANON PIXMA IP1500 PRINTER										
1 Canon BCI-24Bk/BCI-24C	20.98	OEM	★	★	☆	☆	0.04	1.60	268.57	80
2 Ink Again IA1195/IA1196	13.74	generic	○	○	★	☆	0.03	0.86	147.07	70
3 Ink2U BCI-24B/BCI-24C	7.90	generic	●	☆	★	☆	0.02	0.53	90.58	66
4 Jet Tec C14/C15	10.98	generic	☆	○	★	☆	0.01	0.81	132.65	63
5 Nukote BCI-21B/BCI-24C	8.50	generic	●	○	☆	☆	0.02	0.44	77.17	58
EPSON STYLUS C66 PRINTER										
6 Epson T0441/T0452 to 454	39.35	OEM	★	★	★	○	0.03	0.81	140.60	73
7 Print-Rite T0441/T0452 to 454	11.32	generic	★	☆	★	★	0.01	0.25	42.29	71
8 Ink2U CET0441 to 444	27.10	generic	★	☆	★	☆	0.02	0.55	95.20	68
9 Cartridge Save ^a	24.96	generic	★	☆	★	○	0.02	0.51	86.49	62
10 Jet Tec E89B/E89C/E89M/E89Y	31.96	generic	★	○	★	☆	0.03	0.57	100.40	57
HP DESKJET 3845 PRINTER										
11 HP27/HP28	30.00	OEM	★	★	★	○	0.06	1.59	274.75	69
12 Ink2U RHP27/RHP28	30.44	RM	○	○	★	○	0.04	1.55	262.34	58
LEXMARK Z515 PRINTER										
13 Lexmark 10N0016/10N0026	52.94	OEM	★	★	○	☆	0.13	2.25	411.52	72
14 Nukote E272/E273	34.15	generic	★	☆	★	○	0.06	2.42	407.27	63
15 Ink Again IA6135/IA6145	22.98	generic	☆	●	★	○	0.04	1.57	261.69	60
16 Jet Tec 8623JB/8633JB	35.98	generic	●	●	★	●	0.08	3.53	587.72	35

a T044120-CPT/ T044220-CPT/ T044320-CPT/ T044420-CPT