How HP measures inkjet page yields

For all Deskjet, Photosmart and Officejet inkjet printers and All in Ones sold since July 2005, HP publishes page yield data based on the industry standard for measuring ink cartridge yields (ISO/IEC 24711). For laser printer yields, see LaserJet page yields.

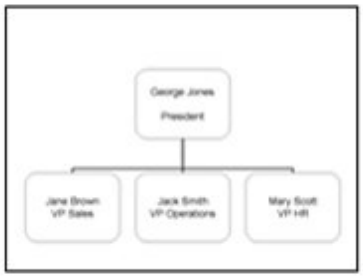
Under the ISO 24711 testing guidelines, a standard set of five 8 1/2 x 11 pages is printed continuously until the cartridge reaches end-of-life.For a variety of reasons, these testing conditions may not reflect what you experience in every day use. ISO standard page yields therefore should be used only as a starting point for comparison purposes, and not to predict the actual yield you will get from your HP printer and cartridge. Actual yield varies considerably based on the content of printed pages, frequency of printing, ink used in printer set-up and other factors, as discussed below.

The five standard ISO pages shown below consist of a mix of text and graphics, and a mix of black and color.

Actual yield will vary depending upon the amount of content on the page. Highly "dense" documents, such as the text document below, may yield fewer pages than the ISO standard, while less dense ones such as the organization chart below would yield more pages than the standard. Printing that uses primarily one color could cause lower yields for that color, and higher yields for colors not heavily used. The yield you experience will depend upon the content that you print.

The five standard ISO pages

High density text



Org Chart

High use of cyan

HP has a separate yield standard for photo printing. See Inkjet photo yields for more information.

Some inkjet users print a few pages at a time, and hours, and sometimes days, pass

between print jobs. With this kind of start/stop printing, inkjet printers use some ink to keep print nozzles clear and ink flowing smoothly. This is critical to maintain the health of your printer, and ensure that you continue to experience the same great print quality that your printer delivered when it was new.However, it can cause your yields to be lower than if you printed the same content continuously.

Some HP inkjet printers use ink from the first cartridges installed for printer start up. This one-time ink usage is not included in the ISO 24711 test, and could impact the yield for your very first cartridge. Also, some HP inkjet printers include an "introductory cartridge" in the printer box, which may print less than an HP replacement cartridge. HP's printer packaging indicates whether introductory cartridges are included with the printer.

For more information on how HP inkjet printers use ink see How ink is used.

Inkjet page yield testing methodology

HP publishes page yield data based upon the ISO standard for measuring ink cartridge yields (ISO/IEC 24711):

- The test is based on a standard suite of five pages printed consecutively until the cartridge reaches end-of-life. A cartridge is determined to be at end-of-life when the test pages fade or, for some printers, when the printer automatically stops due to out-of-ink detection.
- To account for variations that may occur, a minimum of 3 cartridges of each cartridge type is tested in each of 3 printers.
- The ISO test does not account for ink used for printer start-up. The standard specifies that after the printer completes initial start up, the cartridges must be removed and replaced with new cartridges prior to measuring yield.

Details of the ISO/IEC printing standards are available at www.iso.org

What is ISO?

ISO (International Organization for Standardization) is the world's largest developer and publisher of International Standards.

ISO is a network of the national standards institutes of 157 countries, one member per

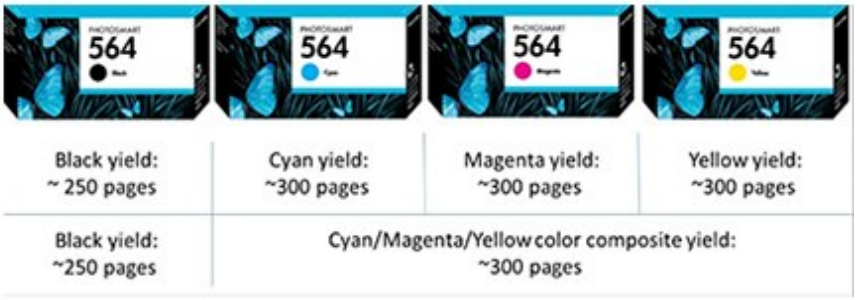
country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system.

ISO is a non-governmental organization that forms a bridge between the public and private sectors. On the one hand, many of its member institutes are part of the governmental structure of their countries, or are mandated by their government. On the other hand, other members have their roots uniquely in the private sector, having been set up by national partnerships of industry associations.

Therefore, ISO enables a consensus to be reached on solutions that meet both the requirements of business and the broader needs of society. For more information on ISO see www.iso.org

HP publishes specific page yield numbers for each cartridge that is recommended for each inkjet printer. Generally this will be the ISO standard yield. The major exception is for cartridges that are used primarily for photo printing, for which HP publishes photo yield (see Inkjet photo yields).

For select printers that have individual color ink cartridges, HP publishes a 3-color composite page yield. The composite yield is based upon the ISO 24711 reporting methodology, which provides for a single average reporting yield for Cyan, Magenta and Yellow ink cartridges. Black is reported separately as an individual yield.



Most HP inkjet cartridges are used by more than one printer model, and yields for a given cartridge can vary from printer to printer, although this difference is usually small. Generally HP determines cartridge reference yields based upon the yield of the first printer released that uses that cartridge. As a result, the cartridge reference yield may be different than the yield published for that cartridge in your printer. HP inkjet cartridge reference yields are always stated in terms of individual, not composite yield. In the example shown below, the Deskjet 6540 was the printer used to determine the reference yields for the 94 and 95 cartridges.

Number	Cartridge reference	Deskjet 6540	Deskjet 6620	Photosmart B8350	Officejet H470
94	~480	~480	~490	~480	~500
95	~330	~330	~330	~310	~330

Although yields are reported for individual cartridges, the test itself is conducted with all of the cartridges installed. Inkjet printers often use ink from more than one cartridge when printing text and graphics. See How ink is used for more detail. In many cases, HP printers allow for more than one cartridge type in a given printer stall, so that different combinations of cartridges are possible. In these instances the yield of one cartridge may be affected by the choice of other cartridges in the printer. The specific cartridge pairings used for each of our printer yields are included on our printer page yield web site HP Printer: Page Yield.

Some older HP printers and cartridges, and cartridges used primarily for large format graphics, do not have page yields.

How HP displays ink volume data

Ink volume (millilitre) information is meant to supplement the published page yield information. For ink cartridges and compatible Deskjet, Photosmart and Officejet printers introduced since July 2005, the ink volume information is based on the volume of ink filled in the cartridge when it is manufactured rather than extracted ink volume. For inkjet cartridges used in printers introduced before July 2005, the ink volume information is based on the extracted ink volume.

For DesignJet and PageWide XL ink cartridges the ink volume information on the packaging is based on the volume of ink filled in the cartridge when it is manufactured rather than extracted ink volume. For cartridges used for other commercial and industrial use, such as Latex, the ink volume information is based on the extracted ink volume.

HP does not recommend using ink volume a sole basis of comparison between printers using different types of cartridges. Different printing systems may use ink very differently (see How ink is used for more details). Comparing printing systems based on ink volume

alone may be inadequate. Customers may find ink volume, along with page yield, to be a useful basis for comparison.

HP's recommendation

Keep in mind that page yield is just one component of cost, and that factors such as quality, reliability, productivity, and efficiency affect cost as well. Products that work reliably will ultimately save you time and money. When you choose an inkjet printer, make sure you consider your individual printing needs.