

HP ORIGINAL SUPPLIES

#1 brand in INK.
#1 VALUE.

HIT PRINT
RELIABLY



HP inkjet technology

The value of HP inkjet print cartridges and their reliability

Innovative design

HP ink is complex to design, with many variables that must be tested and optimized. During a typical ink design cycle, HP evaluates many hundreds of ink variations, with 50 to 80 different performance attributes measured for each variation. HP designs the ink, print cartridge, printer, and media in parallel as part of an iterative process. As ink formulas are created, HP conducts exhaustive tests to help fine-tune each of the components to work optimally together. For extremely realistic and reliable photo images, HP uses a color layering process precisely tuned for HP ink and paper. Any changes in the ink formulation could affect the reliability of the system as well as the quality of the printed output.

HP thermal inkjet printing relies on genuine HP ink within the print cartridge to work optimally. During the printing process, tiny ink drops—as small as 4-picoliters—are launched through hundreds of printhead nozzles onto the paper. A picoliter is a millionth of a millionth of a liter! Inks contaminated with impurities or with different characteristics can cause problems within the ink cartridge, which is why HP goes to great lengths to ensure its inks always meet the correct formulation. To produce each color dot, HP accurately places as many as 32 tiny drops of ink onto the page. If HP ink is not used, ink drops can eject too quickly, or too slowly, affecting the quality of the print.

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Excellence in manufacturing

Chemists monitor many factors critical to HP's ink quality during the manufacturing process. These factors include pH, viscosity, solvent and dye interaction and surface tension. Constant monitoring ensures the ink performs as expected and remains environmentally friendly.

Ink that does not meet HP's strict specifications can lead to many problems. For instance, impurities deposited on the surface of the printhead's resistors can disable them, leading to unacceptable output quality.

HP manufactures millions of inkjet print cartridges every month, with tightly controlled production processes. These highly automated processes ensure accurate production of the HP inkjet print cartridge. Each nozzle on a printhead is digitally analyzed to ensure that it will deliver the precise size, shape and placement of ink drops. This operation is capable of running across a wide range of temperatures and humidities that can occur in locations all over the world.

Extensive testing

HP inkjet print cartridges are tested to ensure precise, consistent image quality. In design, over 500 measurements are taken on each test page by a photo image analysis system to assess image quality, reliability and longevity. Optical density, color vividness and bleed control are just a few of the many characteristics checked. This level of testing and quality control assures that the printed image is meeting or exceeding HP's highest standards.



Understanding the role of HP supplies in printing reliability

Ink facts

- HP was the first to introduce the thermal inkjet printer.
- HP has improved color inkjet technology to make printing better, easier and more affordable.
- HP inkjet cartridges deliver ink to the page through hundreds of nozzles at 50 kilometers per hour.
- It takes two to three years to develop a new ink formulation. An average of 12,000 engineer and chemist hours go into each HP ink refinement.
- Drops of ink as small as 4-picoliters are used. A picoliter is a millionth of a millionth of a liter!
- Technology drives HP inkjet print quality.
- As many as 32 drops of ink are used to produce each color dot.
- Many chemical factors are monitored during the manufacturing of HP's inks. These factors include pH, viscosity, solvent and dye interaction and surface tension.