

How long will your digital photo prints really last? Good question

Quality of ink, paper important, but test standards remain unsettled

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The most obvious way to save yourself from digital imaging heartbreak is to convert your pixels into photographic prints whenever possible. But experts caution that doesn't guarantee your memories will always be available.

The majority of today's digital images are printed at home, typically using tried-and-true inkjet printers and related supplies. Yet while the technology has improved dramatically over the years, inkjet prints can under some circumstances still lose their luster.

Heat, humidity, light and air pollution take a toll on inkjet prints that are exposed to the open air — say, pinned to a bulletin board or attached to a refrigerator. Those factors cause pictures to fade.

The issue arises, experts say, in one of two general situations: First, when consumers use private-label brands of inkjet paper rather than those from major manufacturers such as Seiko-Epson Corp., Hewlett-Packard Co. or Eastman Kodak Co.; second, when they use brands of paper that have not been designed to work specifically with a particular printer or set of inks.

Experts studying the field stress that they aren't questioning inkjet technology as a method for printing pictures. They say they are simply advising consumers to do extra research and — as with any kind of photography — to shield their most treasured images by putting them behind glass, in a frame.

"The problem is that there are a lot of after-market inks, and there is no guarantee where those inks came from or who did the quality assurance on them," says Doug Bugner, head of Kodak's inkjet printing systems research division, which conducts extensive tests on photographic materials.

"There are a lot of third-party companies making papers, and we don't know what testing they have done. I'd say the best of the (inkjet) technologies — from major manufacturers — have really come a long way. But there are still combinations that people need to be worried about."

Confounding the situation is a longstanding disagreement in the industry about how best to test and rate photographic materials for their lifespan. Companies have been talking for years under the auspices of the International Standards Organization about a mutually agreeable way to predict aging, but to no avail.

Kodak, Fuji Photo Film Co. and other testing labs do agree on the use of accelerated fading

Faded photographs

Printing is a good way to protect against losing your digital images in a computer calamity. But it's not foolproof. Home inkjet prints have improved greatly but can still fade when exposed to light and under conditions such as hanging from your fridge. The four main fade factors:

1 LIGHT. The brighter and more prolonged the exposure, the more quickly an inkjet photo breaks down.

2 HEAT. The higher the temperature, the shorter the photo's lifespan.

3 HIGH HUMIDITY. The more moisture in the air, the faster the fade.

4 AIR POLLUTION. The more atmospheric ozone in the home, the more harm to the photo.

H-P vs. Staples: When ozone takes a toll

Wilhelm Imaging Research, of Grinnell, Iowa, recently tested inkjet photo papers from Hewlett-Packard and Staples by exposing them to significant quantities of air pollution.



Staples at beginning of test.

Describing the test

Wilhelm printed an image on H-P's Premium Plus Glossy and Staples' Photo Supreme High Gloss papers. Both were printed using the H-P Deskjet 6540 printer and H-P 97/99 inks and were exposed to a specific quantity of air pollution produced by electrical discharge. Pollution breaks down the stability of inkjet prints, causing fading.

The pictures on the left are how the images looked at the beginning of the test; the ones on the right, after 20 hours of exposure — equivalent to about six months in a home. The test was an independent project funded exclusively by Wilhelm Imaging; neither company financed the project.



Staples after 20 hours.



H-P at beginning of test.



H-P after 20 hours.

SOURCES: Wilhelm Imaging Research and Eastman Kodak Co.

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On the Web

Wilhelm Imaging Research: Articles and rankings of photographic media, including evaluations of snapshot printers — www.wilhelm-research.com.

Image Permanence Institute: Lab on campus of RIT publishes consumer guides for recovery of water-damaged prints and traditional and digital print stability — www.image-permanence.org; click on "free consumer guides."

Eastman Kodak: Guide to purchasing inkjet printers — www.Kodak.com, click on "inkjet paper," then "inkjet printing basics."

profit independent testing lab that also tests photographic materials and conducts other longevity experiments. To make matters even more maddening, Fuji Photo of Japan, another industry heavyweight, uses a third, more stringent standard.

Kodak argues that its standards are based on years of study of the typical home environment, spearheaded by statisticians, anthropologists and engineers. The company says it has collected more than 500,000 pieces of data from the field on light, temperature, humidity and other conditions over the last half-century.

"We use the data to help design better products for that specific environment," Bugner says. "We don't want to design for things that never occur or occur only one-tenth of the time." Wilhelm Imaging's assumptions are based on a belief that there is no "average" home in terms of lighting. Conditions will vary widely, co-founder Henry Wilhelm says, so he prefers to subject materials to more light to be conservative — but not too much light. The fact that the major inkjet companies have joined his certification program, he contends, positions his work as the "de facto" standard for the industry. "All four companies are saying they're going to play by the same rules," Wilhelm said.

While they may disagree on methodology, Kodak and Wilhelm both concur with the need for a single testing standard, to make it easier for consumers to evaluate marketing claims made on packaging.

Henry Wilhelm's analogy is fuel economy standards imposed on the auto industry by the U.S. government. Imagine how confused consumers would be, he says, if every automaker established its own tests.

Kodak doesn't disagree. "There needs to be standardization. There is no question about that, and we're actively participating," Bugner said.

Until a standard does emerge, "what I recommend is that for very critical photos, people make a print on a material which they know is stable," said Franziska Frey, professor at RIT. □