

# The Important Roles of Inks and Media in the Light Fading Stability of Inkjet Prints

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## Abstract

In the fine art field, the high-resolution inkjet printers made by IRIS Graphics, Inc. have for more than 7 years remained the preferred direct digital output device for printing large format color images. IRIS printers can produce precisely-controlled, near-continuous-tone color images on a wide variety of substrates. IRIS prints can be made with almost every type of paper (including heavyweight artists' watercolor paper having a variety of surface textures), coated polyester or other plastic sheets, photographic-type papers, cloth, and most other materials that will accept water-based inks. Prints may be produced in sizes up to 34 x 46 inches and the printers lend themselves to small-to-moderate volume "print-on-demand" limited edition publishing. All of these factors have contributed to the appeal of IRIS printers among photographers and artists working with digitized photographic images in Adobe Photoshop, Live Picture, or other digital image processing programs, among "digital artists" who utilize computers to create their work, and among publishers who produce work for the fine art, home, and office decor markets.

IRIS printers were originally intended for direct digital proofing in the graphic arts field, and for computer-aided industrial design work. In most such applications, good light fading stability is not an important requirement; the inks that were originally supplied for IRIS printers had comparatively poor light fading stability characteristics, and the prints had a much shorter display life than that of traditional types of color prints. (However, if made on a stable, non-yellowing print support material, the dark storage stability of the original types of inks is very good.) In the fine art field, however, where prints may be sold for many thousands of dollars and the longest possible display

life is desired, new inks with much better light fading stability have been developed during the past several years.

In this presentation, the light fading characteristics of several recently introduced ink sets for IRIS printers will be discussed. "Hybrid" ink sets which consist of inks selected from two or more standard ink sets supplied by the various manufacturers will also be described.

Also discussed will be the light fading stability of prints made with Hewlett-Packard, Epson, Canon, and Lexmark desktop inkjet printers. Potentially adverse intermixture effects with two or more inks (catalytic fading), the behavior of different types of media, the importance of starting density in pictorial image stability tests, and the effects of ambient relative humidity on the stability characteristics of the prints will be discussed. The light fading stability of inkjet prints will be compared to that of current photographic color papers.

## Biography

Henry Wilhelm was one of the founding members of the American National Standards Institute subcommittee established in 1978 to write the ANSI IT9.9 standard on test methods for measuring the stability of color photographs. For the past 14 years he has served as Secretary of that group. The ANSI subcommittee presently is working on a new test methods standard for digital print materials. In 1993 Preservation Publishing Company published a 744-page book by Wilhelm and contributing author Carol Brower entitled, *The Permanence and Care of Color Photographs: Traditional and Digital Color Prints, Color Negatives, Slides, and Motion Pictures*. Wilhelm is a consultant on preservation-related issues to the Museum of Modern Art in New York.