Article: Contemporary Analog and Digital Color Photographic Prints: Dye and Pigment Print Process Descriptors, Naming Conventions, Dating, and Permanence Characteristics (Abstract)
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Contemporary Analog and Digital Color Photographic Prints: Dye and Pigment Print Process Descriptors, Naming Conventions, Dating, and Permanence Characteristics

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Drawing on many years of research associated with *The Wilhelm Analog and Digital Color Print Materials Reference Collection – 1971 to 2014*, this paper describes the wide range of color print processes that comprise the modern era of color photography which began in 1935 with Kodak's introduction of Kodachrome transparency film and the companion Kodak Minicolor print process announced in 1941, both of which utilized images composed of cyan, magenta, and yellow dyes formed by a process known as chromogenic development using external couplers. These products were followed by a large number of color transparency and color negative film and print systems from Kodak, Agfa, Ansco, GAF, Fuji, Konica, 3M, Ferrania, and others. Photographers, galleries, and museums have variously referred to color prints made by these dye image processes as: Type C Prints; Type R Prints; Chromogenic Prints; Color Coupler Prints; Silver-Halide Prints; Lightjet Prints; Lambda Prints; Digital Type C Prints; Digital C Prints; Digital Chromogenic Prints; Duratrans; Digital Duratrans; and brand-associated names such a Ektacolor Prints; Kodak Prints; Crystal Archive Prints; Fujiflex Prints; Duraflex Prints; Endura Transparency Display Material; and so forth. In recent years, many of these print materials could be exposed with an enlarger or contact printed in an "analog" fashion, and the same print material could also be digitally imaged with scanning RGB laser or LED light sources (which can also produce monochrome images on color papers), further adding to the confusion about what the prints should properly be called. Face-mounting to acrylic sheet, lamination, and various types of print coatings have further complicated the naming situation.

Likewise, dye image prints made by the silver-dye-bleach process and dye-imbibition prints have been described using a variety of names, some brand-associated and some with names describing the image formation process.

Digital inkjet processes began entering the photography market in 1991, with dye image prints made on a wide variety of papers by Nash Editions and others using Iris Graphics Printers. A few years later, affordable desktop and large-format inkjet printers were introduced by Epson, Hewlett-Packard, and Canon, which were soon followed by Brother, Kodak, Agfa, HP-Scitex, Mutoh, Mimaki, Roland, EFI-Vutek, Durst, swissQprint, Canon-Oce, Fuji, Noritsu, and other manufacturers. Inkjet printers with improved stability pigment inks came into the market in 1998 and by 2006 most professional and fine art photographic prints were being made with pigment inks, often with printers utilizing six, eight, ten, or even twelve inks. Water-base aqueous pigment inks were later supplemented by solvent-based inks, UV-curable inks, dye-sublimation inks (used with a transfer process for both prints on fabrics and on treated aluminum-base "Metal Prints"), and aqueous Latex inks. Unlike earlier color print processes, inkjet prints can be made on a very wide variety of substrates, including cotton-fiber fine art papers, RC photo-base papers,

plastic supports, and fabrics. UV-curable ink prints can be made with rigid panels, including large sheets of acrylic plastic, aluminum, glass, plywood, and other materials.

In part because the inks and supports used to make inkjet prints are supplied as separate parts of the printmaking process, there are essentially an unlimited number of combinations of inks and supports, which has in turn greatly complicated the description, dating, and naming of these prints.

This paper proposes a simplified list of process descriptions and naming conventions that reconcile usage by photographers, museums and galleries, and the manufacturing industries. The proposed naming conventions distinguish between prints with images made with dyes and those made with pigments. Lists of non-recommended (but commonly used) names are also given. The permanence characteristics of the various processes and guidelines for their preservation are discussed.

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