

GLOSSARY

This glossary provides a list of the terms used in this catalog to describe color photographic processes. Each process may have more than one term associated with it, especially if it was developed and branded by a particular corporation.

Autochrome

Introduced in 1907 by the Lumière brothers, the autochrome was the first reasonably simple and commercially successful color process. It relies on a layer of potato-starch grains dyed red, green, and blue, which acted as colored filters over a silver emulsion on a sheet of glass. Exposures are lengthy, but processing is fairly simple, and the result is a subdued but richly colored image, which some considered the greatest advance in photography since the daguerreotype. The luminous transparencies, however, transmit on average only about twelve percent of the light behind them, so a bright source is needed to fully appreciate their colors. Nevertheless, the autochrome became quite popular with amateurs and artists such as Alfred Stieglitz and Edward Steichen, and it was widely used until the 1920s.

Carbro print

The carbro process relies upon an interaction between pigmented carbon tissues and a silver bromide print. Patented in England in 1919 by H. F. Farmer and sold by the Autotype Corporation in London, the process produces vivid colors and had relative permanence, which made it the popular choice of the advertising industry until the 1950s. A slight variation of the tricolor carbro process, known as Vivex, was marketed quite successfully in England until production ceased in 1939.

Chromogenic print

Chromogenic is the generic umbrella term for the vast majority of color prints in existence prior to the digital era. A chromogenic print—such as Ektacolor, Fujicolor, or Kodacolor—is made on paper that has three emulsion layers, each sensitized to blue, green, or red. Unlike in a silver-dye bleach print, however, the color dyes are not contained in each layer prior to printing but are created during the development process. When the manufacturer's product name ends in “-chrome,” it simply means the same chromogenic process has unfolded on a transparent film base rather than paper, thus producing a color slide. Kodachrome—introduced in 16 mm film form in 1935 and 35 mm slide form in 1936—used proprietary processing chemicals, making the developing of that film possible in only a few specific Kodak labs. The first commercially available chromogenic printing process, Kodacolor, debuted in January 1942, but its dyes were notoriously unstable and remained so until manufacturers made substantial improvements in the mid-1980s to address these concerns.

Color photomechanical reproduction

This term includes a variety of methods for printing reproductions of photographs in books and in the press. Two of the most common methods, each with their own numerous technological variations, are photolithography and photoengraving (also known as gravure). The former involves the distribution of colored inks across the page surface in varying patterns, based on the amount of ink transferred to the paper during printing. Photoengraving relies on varying densities of inks, the direct result of the depth of etched marks, which hold the ink before being transferred onto the printed page. Unlike photolithography, often the mechanical marks of photoengraving are visible with the naked eye. Magazine and newspaper publishers have used both photolithography and photoengraving to reproduce color photographs. Condé Nast perfected photoengraving in the early 1930s, for example, offering the service to many manufacturers and printers. Photolithography, on the other hand, allowed *Life* magazine to feature color photographs on its cover in 1941.

Color proof

A color proof is a full-color test print showing exactly how the colors will appear in the final printing. Color proofs are submitted before the press proof, and therefore provide the penultimate opportunity to make alterations or correct mistakes. An accurate color proof offers color-true reproduction of the contents intended for printing.

Dye imbibition print

In a dye imbibition print, commonly called a dye transfer print after the Kodak product bearing that name, three separate sheets of negative film are produced from a full-color transparency through red, green, and blue filters. From these negatives, enlarged gelatin matrices are made and immersed in cyan, magenta, and yellow dyes. All three matrices are then rolled out under pressure in exact register on a single sheet of paper, and the combination of transferred dye images creates a final full-color print. Materials for dye imbibition made their commercial debut in 1945, but the intricacy of the process kept it from widespread popularity. Nevertheless, because each color is transferred to the final paper independently, it was possible to obtain enormous control over the look of the finished print, making dye imbibition prints well suited to artists and commercial photographers. The process remained in use until the late 1990s, when materials for it became nearly impossible to locate.

Its potential to yield intense, almost hyperreal colors resonated with the embrace of Technicolor by the Hollywood movie industry, and, in fact, the most sophisticated Technicolor three-color process, inaugurated in 1932, relied on the dye imbibition process. (Technicolor first patented a two-color technology in 1917 that was not a dye imbibition process. The rudimentary system required two projectors, one with a red filter and one with a blue-green filter, running simultaneously to create the effect of color. It was replaced by a more advanced version in 1922 that employed a single projector to produce two dyed strips of film cemented together.) The three-color process was achieved by using a Technicolor camera equipped with three strips of film, each recording blue, green, or red simultaneously, as well as a refined procedure of dye imbibition printing. These techniques ensured the intensely rich colors that were the industry standard for Hollywood color films until February 1975, when the Technicolor imbibition plant closed.

Internal dye diffusion transfer print

An internal dye diffusion transfer print is a one-of-a-kind, “instant” color photograph, such as a Polaroid print. The process uses a film pack that includes up to thirty different layers. The film pack is ejected from the camera immediately after exposure, breaking open a pod of chemistry that begins the development process. Chemicals and dyes migrate precisely between layers to create the full-color image. Internal dye diffusion prints are favored for the instant results they provide and for the way an image can be manipulated by physical pressure due to its malleability during the development process.

Silver-dye bleach print

Silver-dye bleach prints, such as Cibachrome, differ from chromogenic prints in that the dyes are fully formed in the paper at the outset. Processing therefore entails selective removal of unwanted dye, rather than the formation of new dyes during development. Initially this material, sometimes called dye destruction, was available only on a paper with a very hard glossy surface, which limited its popularity. But when a softer, more matte finish paper was marketed, the process was adopted by many photographers with an appreciation for its clarity and permanence.

Tear sheet

This term refers to a page cut or torn from a publication to prove to an advertising agency client that the advertisement was published. The publishers of any periodical are legally required to provide a tear sheet upon request of any advertiser.