

KODAK Color Films:

The Differences Between Professional Films and Films for General Picture-Taking



Kodak makes color negative and reversal films for professional applications and for general use. Understanding the differences between films with the “professional” designation and those without it is important to professional photographers, to photo hobbyists, and to casual picture-takers in choosing the right film for their applications.

FILM CHARACTERISTICS

Kodak makes different types of films because different types of photographers have different needs and working habits. To understand the differences in films, let’s first take a look at the similarities.

All color films are manufactured in a similar manner. They are composed of several layers of complex emulsions made of different chemical compounds. Because these compounds tend to change slowly with time, *all* color films will age, beginning on the day that they are manufactured. As films age, their color balance and other characteristics may change slightly.

To provide films that meet the needs of different kinds of photographers, Kodak allows for this aging process during manufacture. Kodak builds a small manufacturing bias into films for general picture-taking to compensate for changes produced by typical storage conditions and delays between purchase and processing. The color and contrast characteristics of some films may also be modified to suit the special needs or preferences of professional customers or photo hobbyists.

Regardless of the film type, you should use *all* films before the expiration date printed on the carton. You will also obtain the best quality when you process the film promptly after exposure.

PROFESSIONAL FILMS

Professional photographers have more demanding requirements than “casual” picture-takers. They need to know that a particular film is near its optimum color balance and speed at the moment they put it into the camera. Because they tend to buy large amounts of film at one time, they also need to know that the film is consistent from roll to roll, and that it will not change significantly during use.

Professionals do not keep color films in a camera for long periods. Usually, they will process the film within hours or days after exposure. A photographer will often run tests and have film processed and checked while models, products, and props wait on a set to be sure that the results meet their clients’ needs.

Kodak professional films are close to optimum color balance when they are manufactured and packaged. The film will remain near this balance if it’s stored as recommended in the instructions or on the film carton and processed before the expiration date on the carton.

The scanning characteristics of films have become an increasingly important consideration for professional photographers. The growth of image digitization for display, electronic distribution, and desktop printing in addition to lithography calls for sharp, fine-grained images and accurate color. Among photographers, lab professionals, and printers, Kodak professional films—both negative and reversal—are widely acknowledged for their consistency and easy scannability. For example, new KODAK PROFESSIONAL PORTRA Films are designed and manufactured to deliver outstanding results regardless of whether the final output is a digital file or a traditional print.

A number of professional applications frequently call for push-processing a film to raise its effective speed. Superior push characteristics are valuable to travel and nature photographers and photojournalists who must deal with difficult and uncontrolled lighting conditions. A number of Kodak professional films incorporate technology that enhances pushability by minimizing the impact on grain, contrast, color, and shadow detail.

Most Kodak professional color films contain the word *professional* in the name—e.g., KODAK PROFESSIONAL EKTACHROME Film E100G. Other professional films for special applications usually contain a word that indicates their intended use—e.g., KODAK EKTACHROME 160T Film. Only professional films are supplied in sheets, multiple-roll packs, and long rolls. General-use films are sold as single rolls, or two or three rolls to a package, depending on the particular film.

Professional color films must meet very tight requirements for color, sharpness, and grain. This ensures that the films, when handled and exposed properly, will deliver optimum color and image structure. Manufacturing professional films in a variety of roll and sheet formats involves added manufacturing costs. Kodak also provides assistance to its professional customers through a staff of technical experts who help professionals as they do critical work.

GENERAL PICTURE-TAKING FILMS

Casual picture-takers usually buy one or two rolls of film at a time. One roll of film may remain in the camera at room temperature for several weeks or even months before processing. The nominal film speeds of films intended for general picture-taking are provided on the outside of the film

KODAK Color Films

The Differences Between Professional Films and Films for General Picture-Taking

carton and in the instructions. Exposing these films at their nominal speeds will produce good results for general picture-taking situations.

STORAGE CONDITIONS

All color films are perishable. Under refrigeration at 13°C (55°F) or lower, the chemical composition of color films remains relatively stable.

Under identical conditions, the stability of professional and general picture-taking films is essentially the same. If they are stored at the same temperature, both types of films will age at the same rate. Some special-purpose films require specific storage conditions. For example, KODAK EKTACHROME Professional Infrared EIR Film requires freezing. Always check the storage temperature that is printed on the film carton.

Professional Films

In general, professional films are not designed for long periods of storage at room temperature. However, with today's films, refrigeration is less of a necessity.

In the past, most professional films required storage at 13°C (55°F), except for a few films designed for photojournalists and others who often work on location where refrigeration isn't available. However, the keeping properties of films—especially color negative films—have improved dramatically in the last several years. Storage of color negative films at room temperature for several weeks normally doesn't cause a noticeable shift in color balance or contrast. Storage of professional color reversal films at normal room temperature for *short* periods of time—i.e., a couple of weeks—will not cause any noticeable change.

For long-term storage, refrigeration is still the best way to maintain professional films at optimum quality.

General Picture-Taking Films

Under normal temperature conditions of 24°C (75°F) or lower, Kodak color films for general picture-taking *do not* require refrigeration. Storing them at room temperature allows the film to mature to its aim color balance and speed.

You can refrigerate these films to minimize changes if you have a good reason to do so. For example, if after using some rolls of a particular film, you want to maintain the film at that specific color balance for an extended period, you can store other rolls of the same emulsion in a refrigerator or freezer. (The emulsion number is printed on the film carton.)

Other Storage Recommendations

We *do not* recommend refrigerated storage to extend film life beyond the expiration date printed on the carton, especially for high-speed films such as KODAK MAX Versatility Plus and KODAK PROFESSIONAL PORTRA 800 Films.

High-speed film used after its expiration date may show excessive graininess due to the effects of cosmic and gamma radiation that is naturally present in the environment.

Refrigeration will not prevent the effects of radiation.

During the summer or in tropical regions, where temperatures exceed 24°C (75°F) for extended periods, we recommend refrigerated storage for *all* Kodak films. Do not open the original, sealed packaging until you are ready to use the film. If you open it, the protection against high humidity will no longer be effective.

If you opened the package, reseal the film in vapor-tight packages or in cans or jars before refrigerating it. You can store 35 mm films in their plastic canisters. When ambient temperatures return to normal, at or below 24°C (75°F), remove films for general use from storage so that they can age normally as intended.

To avoid condensation on cold film surfaces, let all film warm up to room temperature before breaking the seal. Warm-up times are shown in the table below.

Type of KODAK Film Package	Warm-Up Time (in Hours) to Reach 75°F (24°C)	
	From a Refrigerator	From a Freezer
120/220 roll	1/2	1
135 magazine	1	1 1/2
35 mm long roll	3	5
70 mm long roll	5	10
10-sheet box	1	1 1/2
50-sheet box	2	3

Note: Times are based on cartons that are separated to allow good air circulation.

MORE INFORMATION

E-30 *Storage and Care of KODAK Photographic Materials—Before and After Processing*

Kodak Professional