



# KODAK Color Films

## THE DIFFERENCES BETWEEN PROFESSIONAL FILMS AND GENERAL PICTURE-TAKING FILMS

### INTRODUCTION

Kodak manufactures 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, photo hobbyists, and everyday picture-takers in choosing the right film for their applications.

### FILM CHARACTERISTICS

Kodak makes different types of films because the photographic needs and working habits of users vary. To understand the differences in films, first consider the similarities. The sharpness, image stability, and granularity of professional films and their counterparts for general picture-taking are similar. The color and contrast characteristics of some films may be modified to suit the special needs or preferences of professional customers or photo hobbyists.

The one characteristic that *all* color films share is that 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 general picture-taking films to compensate for changes that usually occur during storage and use. This bias allows for changes produced by room-temperature storage and for typical delays between purchase and processing.

Use *all* films before the expiration date printed on the film carton. You will also obtain the best quality when the film is processed promptly after exposure.

### PROFESSIONAL FILMS

The professional photographer has more demanding requirements than the general picture-taker has. The professional needs to know that a particular film is near its optimum color balance at the moment it is put into the camera. He or she must also be able to measure, through testing, any slight color or speed bias in a particular film or emulsion, and then adjust filtration and exposure to compensate. Kodak professional films are close to optimum color balance when they are manufactured and packaged. The film will stay near this balance when it is stored at 55°F

(13°C) or lower (under refrigeration)—and processed before the expiration date printed on the film carton.

Professional photographers tend to buy large quantities of film at one time. They need to know that the color balance and speed of all this film has been accurately established, that the film is consistent from roll to roll, and that it will not change significantly during the time they are using it.

Professional color films are not kept in a camera for long periods. Generally, a professional photographer will have the film processed within hours or days after exposure so that the color balance doesn't shift significantly. A photographer will often have film processed and checked while holding expensive models or products and props on a set. Professionals need to be sure that the film reproduces colors in a way that meets their clients' needs.

Most Kodak professional color films contain the word *professional* in the name; for example, KODAK EKTACHROME Professional E100S Film. The names of other professional films for special applications usually contain a word that indicates their intended use; for example, KODAK EKTACHROME Duplicating Film. Only professional films are supplied in sheets, multiple-roll packs, and long rolls. General-use films are sold as single rolls, and two or three rolls to a package, depending on the film.

The slightly higher cost of professional films is due to the increased cost of manufacturing and the assistance Kodak provides to professional customers. Kodak maintains a highly trained staff of technical personnel to assist professional photographers who are doing critical work. The manufacture of professional films includes testing to provide products with differing aim points, additional formats, and specific film-speed ratings for batches of some films. Instructions for sheet sizes of KODAK EKTACHROME 64T Professional Film, for example, include reciprocity information in addition to specific film-speed data for each emulsion. Proper use of this supplementary data minimizes the amount of testing and film usage that would otherwise be required to establish the best exposure conditions for producing high-quality professional photographs.

### GENERAL PICTURE-TAKING FILMS

Casual picture-takers, on the other hand, 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 months before being processed. The nominal film speeds of films intended for general picture-taking are provided on the outside of the film carton and in the instructions. Exposing these films at their nominal film speeds will produce good results for general picture-taking situations.

# KODAK Color Films

## THE DIFFERENCES BETWEEN PROFESSIONAL FILMS AND GENERAL PICTURE-TAKING FILMS

### STORAGE CONDITIONS

All color films are perishable. Under refrigeration at 55°F (13°C) 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. Specific storage conditions are given for special-purpose films such as KODAK EKTACHROME Infrared Film, which requires freezing. Always check the storage temperature that is printed on the film carton.

### Professional Films

Most Kodak professional color films are manufactured for *refrigerated* storage. The exceptions are KODAK EKTAPRESS Professional Films (available in 5-roll pro-packs and 50-roll press-packs); KODAK EKTACHROME 64X and EKTACHROME 100X Professional Films in press-packs; and KODAK EKTACOLOR Pro 160 Film. These films are intended for photojournalists and other photographers who use film in situations that prohibit refrigerated storage. Storage of other professional color films at normal room temperature for *short* periods of time will not cause any noticeable change. For example, storage for two weeks at room temperature will not cause any significant shift in color balance or contrast.

Professional color films *do not* have to be rushed from cold storage to the camera. We recommend using good judgment and care in handling these films. Typically, a roll of professional color film will be exposed within a couple of weeks after being removed from storage, and processed within a week after exposure.

### General Picture-Taking Films

Under normal temperature conditions of 75°F (24°C) 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.)

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 ROYAL GOLD 1000 Film. 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 this.

During the summer or in tropical regions, when temperatures exceed 75°F (24°C) 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. Otherwise, the protection provided against high humidity will no longer be effective. If the package has been opened, reseal the film in vapor-tight packages or in cans or jars before storing it. You can store 35 mm films in the canisters in which they are packaged. To avoid condensation on cold film surfaces, let the film warm up to room temperature before breaking the seal.

When ambient temperatures return to normal, at or below 75°F (24°C), remove Kodak color films for general use from storage so that they can age normally as intended. Warm-up times, which vary with the amount of material and the type of package, 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 and 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:** Separate cartons to allow good air circulation.



## PROFESSIONAL & PRINTING IMAGING

# KODAK Color Films

THE DIFFERENCES BETWEEN PROFESSIONAL FILMS AND GENERAL PICTURE-TAKING FILMS

---



PROFESSIONAL & PRINTING  
IMAGING