Kodak

process your own COLOUR FILM

PROCESS YOUR OWN COLOUR FILM

If you have never processed your own colour films before, you have missed one of the most fascinating sides of a fascinating hobby. No special apparatus is necessary: indeed, if you already do some black-and-white processing you probably have everything needed.

Home processing offers some obvious advantages over having it done commercially – it is cheaper if you process more than two films in a kit of chemicals (and the solutions keep well), it is quicker (you can show transparencies which have been taken only three hours earlier), you can process short lengths if you do not wish to use up all the film at once.

This booklet tells you all about processing Kodak 'Ektachrome' and 'Kodacolor-X' Films – what equipment and chemicals you need, what each solution does, what happens to the films at each processing stage, how the colours are produced.

EQUIPMENT

The only equipment you need is a tank, a timer, a thermometer and some bottles. In addition, for 'Ektachrome' Films only, you need a Photoflood lamp. That is all.

Almost all modern tanks are suitable, but the one you use must be able to hold at least 225 cc (8 fl oz) of solution. If you use smaller quantities of developer there is a risk of the film being under-developed. Reels with transparent spirals are an advantage for processing 'Ektachrome' Films but they are not essential, and are not necessary for processing 'Kodacolor-X' Film. Dish processing of colour film is quite unpractical and should not be attempted.

The thermometer should cover the range 50 – 90°F (10 – 32°C) and must be capable of showing 75°F (24°C) precisely, as this is a critical temperature in processing 'Kodak' colour films. A mercury thermometer is better than a spirit one, as it responds more quickly to small temperature changes. It must be slim enough to slide down the centre of the tank to check solution temperatures during processing. If you can, check the accuracy of your thermometer before using it.

Any timer is suitable which can be relied on to show time exactly. (Darkroom timers are not always accurate and, like thermometers, should be checked before use.) It is standard practice to drain tanks for 15 – 20 seconds at the end of each processing step, so the timer should have a seconds hand, or be graduated in quarter-minutes. An ordinary wrist-watch which has a seconds hand is quite suitable, but if you use this always note on a piece of paper the time that each processing step commences.

When 'Ektachrome' Film is being processed it is necessary to give it a "reversal exposure" before placing it in the colour developer. This is done by exposing the film to a bright light. The most suitable light source is a No. 1 Photoflood lamp, an inexpensive item which you can obtain from your photographic dealer. If you ask for one with a "B.C." cap it can be used in an ordinary electric light socket. Daylight is not recommended for the reversal exposure as it is rather variable. Fluorescent lighting, too, is unsuitable as it may be too weak.

PREPARING THE SOLUTIONS

The chemicals for the two processes make 600 cc of working solutions. This is roughly 20 fl oz, and one-pint bottles are ideal for storing them. You will need 7 bottles for the 'Ektachrome' process, and 6 bottles for the 'Kodacolor' process. Use dark glass bottles if possible. They should have plastic caps or cork stoppers. Metal caps are best avoided as they react with some of the chemicals to give unwanted side-effects. You can get cork stoppers cheaply from your chemist, but make sure that you use the same cork or cap for the same bottle of solution, to avoid any risk of contaminating one solution with another. A dab of coloured paint on the bottle and on the plastic cap or cork will help to show which belongs to which bottle.

When you order the chemicals from your dealer make sure you identify them correctly. Those for processing 'Ektachrome' Films are known as "Kodak 'Ektachrome' Film Processing Chemicals, Processes E-2 and E-3". Those for processing 'Kodacolor-X' Film are known as "'Kodak' Colour Film Processing Chemicals, Process C-22." Each kit of chemicals is supplied in two units so that it is not necessary to buy complete new kits when the developers, which become exhausted first, are used up.

Solutions may be made up with ordinary tap water. Distilled water is not necessary but can be used if you wish. The same applies to boiled water. Whatever water you use, it is a good idea to filter the solutions initially, for the emulsions of a colour film become rather tender during processing and are easily damaged by pieces of grit. A simple filter can be made by putting a plug of cotton wool in a funnel. Change the plug for each solution. When you are making up the solutions take great care that they do not contaminate one another. It is safer to prepare one solution at a time, bottle it, and label the bottle before you start on the next one.

An ordinary china jug is perfectly satisfactory for mixing the solutions, as indeed is any container made of glass or earthenware. Best of all is a one-litre glass beaker which can be bought quite cheaply and which can be heated or cooled quickly with little danger of cracking. Always wash the mixing vessels well immediately after they have been used. Stainless steel containers or spoons can be used for the mixing of chemicals, but any other metal may ruin the solutions – and the metal.

Store all bottles away from direct sunlight and keep them reasonably cool, but do not let them get too cold (below 60°F, 16°C) or there is a possibility of some of the chemicals crystallizing out of solution. If this should happen stand the bottles of solution in warm water (77 – 95°F, 25 – 35°C) to re-dissolve the crystals before use.

CAPACITY OF SOLUTIONS

The developers will keep perfectly for up to 4 weeks, even if used from time to time, as long as they are stored in full, tightly-stoppered bottles. All the other solutions will keep for 8 weeks. Provided that the storage life of the solutions is not exceeded, the developers may be used to process the following amounts of film:

Film Size	Process E-2 ('Ektachrome')	Process C-22 ('Kodacolor-X')
828	—	10
126–12	—	10
126–20	10	6
127	9	6
120/620	5	4
135–12	—	8
135–20	8	5
135–36	5	3