

“Cross-Processing” Color Negative Films in Process E-6



Today, many labs receive requests from photographers to process color negative films in Process E-6. The results the photographers are looking to achieve are muted images with low saturation. Many labs want to know how much color negative film they can process without adversely affecting their Process E-6 and color reversal films.

Note: Kodak does not recommend processing color negative films in any process other than the process intended for the specific film type.

Processing films in the wrong process invalidates any guarantee of the film's quality. Nevertheless, labs want guidelines about the amount of color negative film they can process without adversely affecting their processing lines. The following information is based on seasoning tests run by processing color negative film at a “Push-2” condition.

PROCESSING COLOR NEGATIVE FILMS

As a guide, labs that only process camera films can season their process up to 10 percent with color negative film at a Push-2 condition, with a first-developer replenishment rate of 200 mL/ft². If labs process duplicating films, the amount of color negative film allowable will be less—approximately 5 percent seasoned.

If the processing time is shorter than the time for a Push-2 process and/or the replenishment rate is greater than 200 mL/ft², the amount of color negative film allowable will increase. If the processing time is longer than the time for a Push-2 process, the amount of film allowable will be less.

The actual amount of color negative film allowable (5 to 10 percent seasoned) will depend on the first-developer tank volume. At 10 percent seasoned, this amount is equal to approximately one-half of the first-developer tank volume (in litres). For exact amounts, use the equations below or see the table.

EFFECTS ON THE PROCESS

If a lab processes too much color negative film, the process will go “slow” (plus density or dark). You will notice a slightly greater effect in the toe density (TD) than in other parts of the curve. Labs can expect to see effects similar to those caused by first-developer underreplenishment; typically, this is caused by a build-up of bromide in the first developer.

PROCEDURES FOR LABS

If your lab processes color negative films in Process E-6, monitor the TD (toe density) and LD (speed) steps of your control plots and look for speed shifts. If you detect a speed shift, follow the recommendations for first-developer underreplenishment in Section 5 of KODAK Publication No. Z-119, *Using KODAK Chemicals, Process E-6*, as a guide for getting your process back in control.

If possible, stagger processing large amounts of color negative film over the course of the day. Process small batches at a time between your typical color reversal work.

Note: This information is provided only as a guideline. The results in different labs will vary based on the film type that is processed, the degree it is pushed, replenishment rates, machine design, and process utilization.

The guidelines do not apply to rotary-tube processing, because fresh chemicals are used for each process run.

To determine the allowable amount of color negative film you can process with a first-developer replenishment rate of 200 mL/ft², use **one** of the following equations *or* the information in the table below.

For 5 percent seasoned ⇒
amount of film (ft²) = 0.25 x first-developer tank volume (litres)

For 10 percent seasoned ⇒
amount of film (ft²) = 0.55 x first-developer tank volume (litres)

First-Developer Tank Volume (litres)	Amount of Color Negative Film Allowable (ft ²)		Equivalent Number of 135-36 rolls of film	
	5 percent*	10 percent†	5 percent	10 percent
5	1.3	2.8	2	5
10	2.5	5.5	4	9
20	5.0	11.0	9	19
30	7.5	16.5	13	29
40	10.0	22.0	17	38
50	12.5	27.5	22	48
75	18.8	41.3	33	72
100	25.0	55.0	44	96

* Do not allow the amount of color negative film to exceed 5 percent of the total amount of film processed in any given day.

† Do not allow the amount of color negative film processed to exceed 10 percent of the total amount of film processed in any given day.

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