



KODAK COLOR NEGATIVE

C-41 FILM PROCESSING KIT

C-41 Processing Instructions

This kit will process all conventional C-41 compatible color negative films. Chromogenic B&W films may also be processed. This kit is a non replenisher kit that is designed for small tank and rotary tube processing.

KODAK C-41 Negative Developing kit is the premier chemical processing kit for color negative films in rotary processors and small tanks. All of the processing chemicals are concentrates. Actual number of rolls that can be processed depends on individual processing considerations.

Safety Data Reference:

Developer	1A	SDS# CAT 519 9005A
	1B	SDS# CAT 519 9005B
	1C	SDS# CAT 519 9005C
Bleach	2A	SDS# CAT 5199039A
	2B	SDS# CAT 5199039B
Fixer	3	SDS# CAT 519 9047
Final Rinse	4	SDS# CAT 519 9062

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1. KODAK C-41 Film Processing Kit Contents

Process	Chemical Concentrate	Kit Variant	
		2.5 L Contents	5L Contents
Developer	1A Developer A 1B Developer B 1C Developer C	188 ml 43.8 ml 94.6 ml	376 ml 87.6 ml 189.2 ml
Bleach	2A Bleach A 2B Bleach B	500 ml 1000 ml	1000 ml 2000 ml
Fixer	3 Fixer	500 ml	1000 ml
Final Rinse	4 Final Rinse	22.5 ml	45 ml

2. Making Working Solutions

To make:	Process Step	Water	Part A	Part B	Part C	Total
2.5L	Developer	2175.6 ml	188 ml	43.8 ml	94.6 ml	2500 ml
	Bleach	1000 ml	500 ml	1000 ml	-	2500 ml
	Fixer	2000 ml	500 ml	-	-	2500 ml
	Final Rinse	2477.5 ml	22.5 ml		-	2500 ml
5L	Developer	4351.2 ml	376 ml	87.6 ml	189.2 ml	5000 ml
	Bleach	2000 ml	1000 ml	2000 ml	-	5000 ml
	Fixer	4000 ml	1000 ml	-	-	5000 ml
	Final Rinse	4955 ml	45 ml	-	-	5000 ml

Smaller amounts of working solutions can be mixed, but careful attention must be paid to the mixing ratios

Preparing less than 2.5 L:
For 1000 ml - divide all volumes mentioned above by 2.5
For 500 ml - divide all volumes mentioned above by 5
Example: to make 1000 ml of Fixer instead of the full 2.5 L, mix 200 ml (500 ml divided by 2.5) of Fixer concentrate with 800 ml of water (2000 ml divided by 2.5)

3. Standard Processing Steps

Rotary Tube Processors

Solution/Step	Time* (min:sec)	Temperature °C (°F)
Optional Warm-Up†	2:00 - 6:00	38 - 45 (100 - 113)
COLOR NEGATIVE Developer	†3:15	37 - 39 (99 - 102)
COLOR NEGATIVE Bleach	6:30	24 - 38 (75 - 100)
Wash	1:30	24 - 41 (75 - 105)
COLOR NEGATIVE Fixer	6:30	24 - 38 (75 - 100)
Wash	3:15	24 - 38 (75 - 100)
COLOR NEGATIVE Final Rinse§	1:30	24 - 38 (75 - 100)
Dry	As needed	20 - 60 (68 - 140)

Chemistry can be used one-shot or replenished with the appropriate KODAK Color Negative replenisher solutions.
* Times include a 10-second drain time at the end of each step. Solution volume depends on the type of processor.
† Tube is loaded with film and ready for processing. Do not immerse the film in a warm water pre-soak. Warm-up step is done by warming the outside of the tube in a tempered water bath.
‡ Determine the correct time for your processor by running a test with your tube.
§ If final rinse foaming in the tube is a problem, you can do the final rinse of the film in a separate tank.

Small Tank

Solution/Step	Time* (min:sec)	Temperature °C (°F)	Comments
Developer	3:15	37 - 39 (99 - 102)	Initial agitation for 30 seconds, followed by 2 seconds of agitation every 15 seconds.
Bleach	6:30	24 - 41 (75 - 105)	Initial agitation for 30 seconds, followed by 2 seconds of agitation every 30 seconds.
Wash	1:30	24 - 41 (75 - 105)	Use running-water wash at a rate that will fill tank every 4 seconds. Or fill tank with water, agitate for 5 seconds, and dump. Repeat cycle throughout wash time.
Fixer	6:30	24 - 41 (75 - 105)	Initial agitation for 30 seconds, followed by 5 seconds of agitation every 30 seconds.
Wash	3:15	24 - 41 (75 - 105)	Repeat procedure used for first wash.
Final Rinse	1:30	24 - 41 (75 - 105)	Initial agitation for 30 seconds; no further agitation required.
Dry	As needed	24 - 43 (75 - 110)	Remove film from reel, and hang film to dry in dust-free place or drying cabinet. Attach film clip to top to hang it, and add weighted clip to bottom to prevent curl.

Agitate the tank by turning the tank over (inverting it) with a slight rotation (quarter turn), then return the tank to an upright position. Do this at a rate of one agitation cycle per second.



4. Storage Conditions

Chemical	Concentrate Once Opened	Working Solution
Color Developer	12 weeks	1 week
Bleach	24 weeks	24 weeks
Fixer	24 weeks	24 weeks
Final Rinse	Indefinite	Indefinite

Care should be taken to store the solutions in clean bottles with as much air expelled as possible. Keep concentrates in their original packaging when mixing less than the full volume of the kit.

5. Safety and Environmental

Each KODAK C-41 kit complies with environmental regulations and each component is labelled accordingly. In addition, SDS's are available for each component that discuss safe disposal of the chemicals and more details on any chemical hazards. Consult your dealer for the latest SDS.

6. Troubleshooting

Fault	Possible Cause	Remedy
Negative too dark	Overexposure in camera Developing time of color developer too long Contamination of color developer	Check camera and exposure Shorten developing time by 15-30s Rinse equipment and reels thoroughly
Negative too light	Underexposure in camera Prewash/Prewarming of the tank has been omitted Developing time of color developer too short	Check camera and exposure. Add a prewash time of 3 to 5 min. to the program Extend developing time by 15-30s
Uneven color areas, streaks and stripes	Insufficient filling quantity Prewash has been omitted Color developer was poured in too slowly	Check filling amount Add a prewash time of 3 to 5 min. to the program. Pour in the color developer quickly
Color fog	Mixing vessels of the processor are not clean Contamination of the developer by other chemicals.	Use individual mixing vessels and mixing rods for each bath
Drying spots on the dry film	Tap water is too hard when preparing the stabilizer bath	Mix tap water with distilled or or demineralized water in the proportion 1:2
Negatives appear magenta and print cyan	Insufficient bleach and fixing	Re-bleach and fix the film and then re-dry