

MORE CHEMISTRY CAPACITY (cont'd)

• If you take full responsibility for quality of results, it is possible to process more film over a much longer timespan. This procedure is somewhat risky unless you process some film every day or so to monitor chemistry performance. Otherwise, partially used working solutions left untouched for a week or more might have changed so significantly that you would suffer a dramatic decline in results. If you choose to operate under these conditions, our best advice would be to process a small piece of test film, and on the basis of these results, decide whether or not to commit valuable pictures to the chemistry.

PUSH PROCESSING

All color negative films suitable for the C-41 process can be underexposed and processed for higher than normal film speeds by extending the development time (push processing). As a rule, pushing should be done only when necessary (i.e., when higher film speed is needed) because negative quality does suffer somewhat. When pushing is required, start with the highest speed film available. In other words, pushing an ISO 100 film two stops to ISO 400 offers no benefit since an ISO 400 film is already available.

When Exposure Change is:

ISO Speed

Increase Development Time:

2 stops under

4x normal

1.5x (i.e. 3.5 min x 1.5 = 5.25 min)

1 stop under

2x normal

1.25x (i.e. 3.5 min x 1.25 = 4.40 min)

CHROMOGENIC B&W FILMS

When exposing these films in the range of ASA 100-400, use the standard development times given in the time/temperature chart. When exposing these films at ASA 800, increase development time by 40% and, when exposing at ASA 1600, increase development time by 80%. For different times and temperatures consult the film instruction sheet.

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
Thin negatives	-Low development temperature -Underexposure in camera -Developer exhausted	Reread and follow all instructions carefully on temperature control, solution, capacity, etc.
Negatives appear more magenta than more normal with higher density near sprocket holes.	-Developer too warm -Overly-vigorous agitation in conventional tank	Maintain temperature control. Use only agitation methods prescribed.
Black "dirt" specks on negatives which print as white spots.	-Improperly washed 5247 films	Remove ALL carbon jet backing during final rinse
Negatives look OK but prints are a bit too flat.	-Too little development	Increase development time and increase temperature
Negatives look OK but loss of highlight and shadow detail.	-Too much development	Decrease development time and decrease temperature.
Reddish cast to film	-Exhausted Blix -Blix temperature too low -Blix time too short	Reblix film in film solution for recommended time and temperature.

SAFETY NOTES

WARNING This kit contains chemicals that may be hazardous if misused. Always wear safety glasses, rubber gloves and protective clothing, such as a lab coat or plastic apron, when working with chemicals. While the hazard rating of this kit is low, caution should be exercised. Do not allow children to use this kit without adult supervision.

DEVELOPER

Contains: Sodium Carbonate and 4-amino-3-methyl-N-(β-hydroxyethyl)-aniline sulfate. May cause irritation. Avoid skin contact. In case of contact, flush with water. **DO NOT ALLOW EYE CONTACT.** In case of eye contact, flush with water for 15 minutes and contact a physician immediately! **DO NOT TAKE INTERNALLY.** If swallowed, **INDUCE** VOMITING. Contact a physician immediately!

BLIX

Contains: Ammonium Thiosulfate. May cause irritation. Avoid skin contact. In case of contact, flush with water and wash with a non-alkaline soap. **DO NOT ALLOW EYE CONTACT.** In case of eye contact, flush with water for 15 minutes and contact a physician immediately! **DO NOT TAKE INTERNALLY.** If swallowed, **INDUCE** VOMITING. Contact a physician immediately!

STABILIZER

Contains: Hexamine. May cause irritation. Avoid skin contact. In case of contact, flush with water and wash with a non-alkaline soap. **DO NOT ALLOW EYE CONTACT.** In case of eye contact, flush with water for 15 minutes and contact a physician immediately! **DO NOT TAKE INTERNALLY.** If swallowed, **INDUCE** VOMITING. Contact a physician immediately!

unicolor®

K-2 POWDER C-41 PROCESSING COLOR NEGATIVE CHEMISTRY

Catalog # 10123

INSTRUCTIONS

FOR 1 LITER POWDER KITS

You may use this kit to process any Kodacolor/Vericolor™ or C-41 compatible film. It will also process Chromogenic B&W films. These instructions will show you how to process the film and how to reuse the chemicals for extended life.

WARNING

This kit contains chemicals that may be harmful if misused. Do not allow children to use this kit without adult supervision. Read all safety notes before proceeding.

MIXING NOTES

- Use water well above the temperature you want to use to develop your film. This allows for shorter warm-up time.
- Stir continuously while mixing.
- Keep everything very clean. A few drops of Blix, soap or other contaminate can destroy the developers.
- Mark your containers clearly. This will prevent confusion and processing out of order.
- Use safety glasses and rubber gloves while working with chemicals. Wear a lab coat or other protective clothing. *Do not allow children to use this kit without adult supervision.*

MSDS (Material Safety Data Sheets) for this kit are available by written request.

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MIXING CHEMICALS

DEVELOPER

Place 800 ml of water at 110°F (43.5°C) into a clean glass or plastic container. While stirring, add the contents of the packet marked **Developer**. Stir well. Add water to make 1000 ml. Temperature may be adjusted +/- on this volume of water to make working solution come out at or as near to your processing temperature as possible.

BLIX

Place 800 ml of water at 110°F into a clean glass or plastic container. While stirring add the contents of the packet marked **Blix A** and follow with **Blix B**. Stir well. Add water to make 1000 ml. Adding Blix powder to water creates an endothermic reaction as it goes into solution.

STABILIZER

Add contents of bag marked **Stabilizer** to 1000 ml of water in a clean container. Mix thoroughly.

PROCESSING STEPS FOR HAND TANK OR DIP & DUNK

For processing with a Unicolor® or Paterson® type plastic tank or Nikkor® stainless steel tank with inversion agitation or open tank with lift rod agitation. Both types of tanks should be placed in tempered water baths in order to maintain consistent solution temperatures.

		TIME	TEMP	AGITATION
Step 1	Pre-Soak	1 min	102°F	None
Step 2	Developer	3.5 min	102°F	Continuous for first 10 sec., then 4 lifts or 4 inversion cycles* every 30 sec. thereafter
Step 3	Blix	6.5 min.	95°F - 105°F	Same as above
THE REMAINING STEPS CAN BE DONE IN ROOM LIGHT WITH THE TANK LID OFF				
Step 4	Wash	3 min.	95°F - 105°F	Running water
Step 5	Stabilizer	½ to 1 min.	Room	Agitate for first 15 sec.
Step 6	Dry	n/a	< 140°F	n/a

* 1 inversion cycle = 1 back and forth motion as shown in the graphic at the right

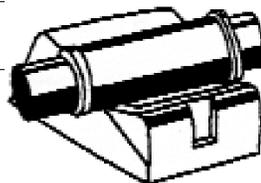


PROCESSING STEPS FOR ROTARY-TUBE

For use with Unicolor® type film drum

	75°F	80°F	85°F	90°F	95°F	104°F *
Step 1 Pre-soak	COMPLETELY FILL FILM DRUM WITH WATER					
	60 sec.	60 sec.	60 sec.	60 sec.	60 sec.	60 sec.
Step 2 Developer	17.5 min	14.25 min	10.25 min	8 min	5.75 min	3.5 min
Step 3 Blix	8 min.	8 min.	8 min.	8 min.	7 min.	6.5 min.
Step 4 Wash	THE REMAINING STEPS CAN BE DONE IN ROOM LIGHT WITH THE TANK LID OFF					
	Fill and empty the tank at least seven times, minimum time required: 3 minutes.					
Step 5 Stabilizer	Stabilize for 30 seconds to 1 minute at room temperature. Agitate for the first 15 seconds.					
Step 6 Dry	Not over 140°F.					

* Recommended time and temperature



PROCESSING STEPS FOR AUTOMATIC ROTARY TUBE TYPE TEMPERATURE CONTROLLED PROCESSORS

RS41 is optimized for the Wing-Lynch®, Photo Therm®, Jobo® and Arkay® processors as follows:

		TIME RS41 PROCESS	TEMPERATURE †
Step 1	Pre-warm	5 min.	100.4°F
Step 2	Developer	3.25 min.	100.4°F
Step 3	Blix	6 min.	100.4°F
Step 4	Wash	2 min.	100.4°F
Step 5	Wash	2 min.	100.4°F
Step 6*	Stabilizer	½ to 1 min.	Room Temperature
Step 7*	Dry	n/a	< 140°F

† All machine temperature settings are fixed using either a pre-set circuit card or external temperature line

* These steps are performed outside the processor

SOLUTION CAPACITIES

The solution capacities given in the chart below show how many films can be reliably processed in various quantities of working solutions. If you are interested in extracting more capacity from the solutions, please read the statements under the heading "More Chemistry Capacity."

FILM SIZE	110 (20 exp.)	126	135 (24 exp.)	135 (36 exp.)	120	220	4 x 5 (sheet)	8 x 10 (sheet)
Rolls or sheets/ 960 ml (32 oz.)	36	16	12	8	8	4	32	8
Rolls or sheets/ 480 ml (16 oz.)	18	8	6	4	4	2	16	4
Rolls or sheets/ 240 ml (8 oz.)	9	4	3	2	2	1	8	2

MORE CHEMISTRY CAPACITY

One is always concerned about chemistry life and capacity, quality of results and economy when processing multiple rolls in a batch of chemistry. From the user's viewpoint it may seem that chemistry manufacturers are somewhat arbitrary about the number of films which can be processed before the chemistry must be discarded. This stems from the manufacturer not knowing - only guessing - four essential things: how many films will be processed in freshly mixed chemistry; in what manner and how long will the chemistry be stored before processing again; what contaminants have entered the system from either the water supply or from unintentional chemical intermixing; and how far can the results deviate from ideal before the user deems them unacceptable. All developers start on an inexorable downhill exhaustion path the moment they are mixed, and exhaust faster in the presence of air, contaminants and high temperature, and suffer super-imposed stepwise exhaustion with each use. We can offer some observations on extended chemical capacity:

- If you accept the role as the final arbiter of acceptable results it is easily possible to process 25%, 50%, or even more rolls of film than those listed in the capacity charts, so long as all processing takes place within several days after mixing the chemicals. There is only one rule in this exercise: process film until you no longer like the results. The safeguard in this procedure is that results generally will not plummet precipitously from "good" to "bad", but will change gradually.