Mixing Chemicals

First Developer

- Place the recommended amount of water* into a clean glass or plastic container.
- While stirring, add the contents of the bottle marked **1st Developer**.
- The final volume may vary slightly with no adverse effects in processing.

**Water Temperature: 111°F (44°C)*

To make:

1 pint	12 oz. (354 ml)*	4 oz. (118 ml)
1 quart	24 oz. (708 ml)	8 oz. (236 ml)
1 gallon	96 oz. (2.88 liters)	32 oz. (946 ml)
4 gallons	384 oz. (11.4 liters)	128 oz. (3.78 liters)

*Because of rounding, some metric measurements will not be equivalent multiples of the corresponding measurements in ounces.

Color Developer

- Place the recommended amount of water* into a clean glass or plastic container.
- While stirring, add the contents of the bottle(s) marked **Color Developer Part A**. Stir well.
- While stirring, add the contents of the bottle marked **Color Developer Part B**. Stir well.
- The final volume may vary slightly with no adverse effects in processing.

**Water Temperature: 115°F (46°C)*

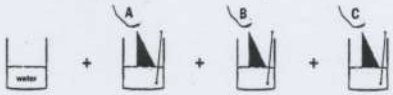
To make:

1 pint	11 oz. (325 ml)	4 oz. (118 ml)	1 oz. (29 ml)
1 quart	22 oz. (650 ml)	8 oz. (236 ml)	2 oz. (59 ml)
1 gallon	88 oz. (2.6 liters)	32 oz. (946 ml)	8 oz. (236 ml)
4 gallons	352 oz. (10.4 liters)	**2 x 64 oz. 4 gal. kit only	32 oz. (944 ml)

Blix

- Place the recommended amount of water* into a clean glass or plastic container.
- While stirring, add the contents of the bottle marked **Blix Part A**. Stir well.
- While stirring, add the contents of the bottle marked **Blix Part B**. Stir well.
- While stirring, add the contents of the bottle marked **Blix Part C**. Stir well.
- The final volume may vary slightly with no adverse effects in processing.

**Water Temperature: 140°F (60°C)*



To make:

1 pint	7 oz. (207 ml)	4 oz. (118 ml)	4 oz. (118 ml)	1 oz. (29 ml)
1 quart	14 oz. (414 ml)	8 oz. (236 ml)	8 oz. (236 ml)	2 oz. (59 ml)
1 gallon	56 oz. (1.65 liters)	32 oz. (946 ml)	32 oz. (946 ml)	8 oz. (236 ml)
4 gallons	224 oz. (6.6 liters)	128 oz. (3.78 liters)	128 oz. (3.78 liters)	32 oz. (944 ml)

*Water temperature listed will bring room temperature concentrates (72°F) to 101.5°F for working solutions.

Mixing Notes

- Smaller amounts of the final working chemical solutions can be mixed, but careful attention must be paid to the mixing ratios.
- Use water that is the same as the temperature you want to use to develop your film. This allows for shorter warm-up time.
- Stir well while mixing.
- Keep everything very clean. A few drops of Blix, soap or other contaminates 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. Also wear a lab coat or other protective clothing. Do not allow children to use this kit without adult supervision.

NOTE: IF THE CHEMICAL CONCENTRATE APPEARS TO HAVE FLOATING CRYSTAL FLAKES OR POWDER, HEAT THE ENTIRE BOTTLE OF CONCENTRATED CHEMISTRY TO AT LEAST 85°F AND SHAKE UNTIL ALL PARTICLES ARE DISSOLVED.

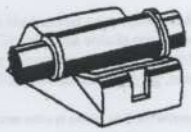
Rotary-Tube Type Processing

The time and temperature data will differ from hand tanks for this type of equipment. This is due to drifting temperature and constant agitation. All solutions, washes, and the pre-wash should remain at the same temperature that you have selected.

	70°F	75°F	80°F	85°F	105°F
Step 1 Pre-Wash	60 sec.	60 sec.	60 sec.	60 sec.	**60 sec.**
Step 2 First Developer	26 min.	23 min.	20.5 min.	16.5 min.	**6.5 min.**
Step 3 Wash	Quickly fill and empty the tube seven times.				
Step 4 Color Developer	7 min.	6.75 min.	6.5 min.	6 min.	**4.5 min.**
Step 5 Wash	Fill and empty the tube seven times.				
Step 6 Blix	15 min.	9.5 min.	9 min.	8.5 min.	**6.5 min.**
Step 7 Wash	Running water for five minutes.				

Notes:
1. The 70°F temperature will show density and color shifts
2. You may expose the film to light after completing step 4.

***Recommended time and temperature.**



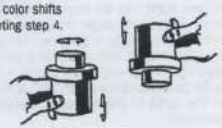
Hand Tank Processing

Agitation is critical for properly developed film. Keep your agitation consistent. After each solution is added to the tank, tap the tank several times sharply on the counter top. This will dislodge any air bubbles and prevent air bells from forming. Except for the wash steps, use the following agitation procedure for all the steps. After adding the chemicals to the tank and tapping, agitate by inverting the tank to the left then right and twisting left and right vigorously for the first 15 seconds of the processing. Then repeat the agitation technique once every 30 seconds.

	70°F	75°F	80°F	85°F	100°F*
Step 1 Pre-Wash	60 sec.	60 sec.	60 sec.	60 sec.	**60 sec.**
Step 2 First Developer	26 min.	20.5 min.	16.5 min.	13.5 min.	**6.5 min.**
Step 3 Wash	Quickly fill and empty tank seven times.				
Step 4 Color Developer	7 min.	6.5 min.	6 min.	5.5 min.	**4.5 min.**
Step 5 Wash	Quickly fill and empty tank seven times.				
Step 6 Blix	15 min.	10 min.	10 min.	10 min.	**6.5 min.**
Step 7 Wash	Running water for five minutes.				

Notes:
1. The 70°F temperature will cause density and color shifts
2. You may expose the film to light after completing step 4.

***Recommended time and temperature.**



Processing Steps for Automatic Temperature Control Processors

RE-6 is optimized for the Wing-Lynch®, Photo Therm®, Jobo®, and Arkay® processors as follows:

		TIME	TEMPERATURE †
Step 1	**Pre-soak**	2 min.	101.5°F
Step 2	**1st Dev.**	6 min.	101.5°F
Step 3	**Wash**	4 min.	101.5°F
Step 4	**Color Dev.**	4 min.	101.5°F
Step 5	**Wash**	4 min.	101.5°F
Step 6	**Blix**	6 min.	101.5°F
Step 7	**Wash**	4 min.	101.5°F
Step 8*	**Dry**	n/a	< 140°F

† All machine temperature settings are fixed using either a pre-set circuit card or external water line.
* This step is performed outside the processor.

Chemical Reuse

Using a volume of chemicals once will not destroy its ability to develop film. However, extra time must be added to the processing to compensate for the weaker 1st Developer. Whenever the 1st Developer is reused, add 4% to the 1st Developer time. For example, you just developed two rolls of film at 105°F in a rotary-tube processor. You have several more rolls to process. To process the next two rolls at 105°F, multiply 6.5 by 1.04. 6.5 x 1.04 = 6.75, so the next two rolls are processed at 105°F for 6 minutes, 45 seconds. The time for the next two rolls is calculated the same way. 6.75 x 1.04 = 7.02 or 7 minutes. *Use the above formula for the 1st Developer ONLY.* Reusing the Color Developer and Blix *does not* affect their processing time. Reusing chemicals will cause a slight color and density shift. The more often a chemical is reused the greater the shift. Best results are obtained when chemicals are used only once.

Solution Capacities

The solution capacities given in the chart below show how many films we recommend you can reliably process in various quantities of working solutions. If you feel you are interested in extracting more capacity from the solutions, please read the statements on the back, titled, "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 consumer's viewpoint it must often 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. If you will recognize at the outset that 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 superimposed 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: you 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 rather will change gradually.
- If you again take full responsibility for quality of results, it is possible to process more film and 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/Pull Processing

- If you have exposed film at a different ISO than what is rated by the manufacturer, you can alter the processing to match your exposure. This is referred to as push or pull processing. This is done with E-6 film by increasing or decreasing the time the film spends in the first developer. Push processing is used when film is exposed at a higher ISO than it is normally rated. Pull processing is when film is exposed at a lower ISO than it is normally rated. Use the chart below for adjusted first developer times. **Adjust First Developer time only.** Best results will be obtained at **105°F in a rotary-tube** type processor or **100°F in a hand tank.**

	70°F*	75°F*	80°F*	100°F	105°F
Push 1 stop	37 min.	29.5 min.	23.5 min.	**8 min.**	**8 min.**
Push 2 stops	42 min.	33.5 min.	26.5 min.	**10.5 min.**	**10.5 min.**
Pull 1 stop	21 min.	17 min.	13.5 min.	**4.5 min.**	**4.5 min.**
Pull 2 stops*	17 min.	14 min.	11 min.	**3.5 min.**	**3.5 min.**

* Not recommended. The times listed are approximate based on a normal slide and may have to be adjusted to produce desired results.

Trouble Shooting

PROBLEMS	SOLUTIONS
Slides are too dark	• Under exposure in the camera • Wrong ISO setting • Outdated film • Temperature too low in 1st Developer • 1st Developer time too short • Contamination of the 1st Developer
Slides are too light	• Over exposure in the camera • Wrong ISO setting • Outdated film • Temperature too high in the 1st Developer • 1st Developer time too long • Contamination of the 1st Developer
Slides are off-color	• Wrong film for light balance, e.g., tungsten film in daylight setting • Wrong color filter • Bad film • Wrong time/temperature combination of Color Developer • Poor wash after Color Developer • Contamination of Color Developer
Black spots	• Air bells
Scum on film	• Residue from water. Rinse with wetting agent after final wash
Silver Streaks	• Too short a time in Fixing-Bleach. Return film to Blix for 5 minutes
Blank film no frame numbers	• Processed out of order
Blank sections	• Film loaded incorrectly

Safety Notes

WARNING *This kit contains chemicals that may be hazardous if misused. Always wear safety glasses, rubber gloves and protective clothing, such as 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.*

1st DEVELOPER
Contains: Potassium Hydroquinone Monosulfonate. 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!

COLOR DEVELOPER PART A
Contains: Sodium Phosphate. 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, *DO NOT* INDUCE VOMITING. Contact a physician immediately!

COLOR DEVELOPER PART B
Contains: 4-amino-N-ethyl-N-(βmethanesulfonamidoethyl)-M-Toluidine Sesquisulfate Monohydrate. 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, *DO NOT* INDUCE VOMITING. Contact a physician immediately!

BLIX PART A
Contains: Ammonium Thiosulfate. 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 PART B
Contains: (Ethylenedinitrillo) tetraacetic acid EDTA. 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!

BLIX PART C
Contains: Acetic Acid. May cause burns. 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, *DO NOT* INDUCE VOMITING. Contact a physician immediately!

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

unicolor®

RAPID E-6 PROCESSING

COLOR SLIDE CHEMISTRY

Catalog #

INSTRUCTIONS
FOR PINT, QUART, GALLON AND 4 GALLON* KITS

You may use this kit to process any Ektachrome™ or E-6 compatible film. It will not process any K-14, Kodachrome™ type films. These instructions will show you how to push or pull 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.

EQUIPMENT NOT INCLUDED IN YOUR KIT

- A stop watch or a darkroom timer.
- A processing tank and reels or a rotary-tube type processor.
- Three empty chemical containers.
- A graduate.
- An accurate thermometer.
- A film squeegee or a soft sponge.
- Temperature control equipment or a large tub to hold warm water.

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