

Table 2

FLEXICOLOR LU Developer Replenisher LORR											
Films	Tank Volume in Litres										
per Week	3	5	8	10	15	20	25	30	40	50	
300	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
200	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	
150	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Red	Red	
100	Green	Green	Green	Green	Yellow	Yellow	Yellow	Red	Red	Red	
75	Green	Green	Green	Yellow	Yellow	Yellow	Red	Red	Red	Red	
50	Green	Green	Yellow	Yellow	Red	Red	Red	Red	Red	Red	
40	Green	Green	Yellow	Yellow	Red	Red	Red	Red	Red	Red	
30	Green	Green	Yellow	Yellow	Red	Red	Red	Red	Red	Red	
20	Green	Yellow	Yellow	Red							
	Green	Normal Utilization, no special procedures required									
	Yellow	Borderline Low utilization, special procedures may be required									
	Red	Low Utilization, special procedures required									

Even if the utilization of your processor does fall within "Red Zone" of the above table, FLEXICOLOR LU Developer Replenisher LORR will require less special procedures and dumping of solutions to keep your processor in control.

If the number of rolls processed is in the "Red Zone," indicating low utilization, the following recommendations can help reduce the effects of low utilization:

- Top off all tank solutions with water at processor startup. If your processor has an auto-top-off system, use it to top off with water at start-up of the processor, but not at shutdown.
- Add a floating lid, or use material to act as a floating lid, in the developer replenisher tank of the processor.
- Use a smaller size of developer replenisher to mix the solution, and mix it more frequently. For example, if you are using the 10-litre size of FLEXICOLOR LU Developer Replenisher LORR, switch to the 5-litre size (CAT No. 823 1672).
- Replace the final rinse tank solutions at least once a month (more often if necessary) to keep them clean and free of biological growth.

Optional Procedures:

- Increase the replenishment rates for all solutions by 10 to 15 percent; do not increase them by more than this percentage.
- When a processor is operating with extremely low utilization, replace approximately 5 percent of the total volume of the developer tank solution each day at startup. Use properly mixed developer working tank solution (water, starter, and developer replenisher). For convenience, keep a supply of developer working tank solution mixed and stored in a sealed container for this purpose.

PROCESS RA-4

In Process RA-4, you have your choices of chemicals to use based on the utilization of the processor. But just as with film processing, if your paper processor is operating in low-utilization conditions, the tank and replenisher solutions in your processor may be prone to the following problems:

- Oxidation of the developer tank solution is the primary concern. Oxidation can cause low developer activity that can subsequently produce low D-max on processed paper. The D-max can get so severe that it may cause your digital printer not to calibrate. If your lab does calibrate, prints will appear low in contrast, unsaturated in color, with a light D-max that appears "cool" or has a blue bias in color.
- All solutions can become overconcentrated.
- The final stabilizer tanks can have increased potential for forming biological growth, which can create dirt problems on processed film. Also, the D-min, or stain on the paper, especially the yellow D-min, can increase by as much as 6 density points.

The developer solution is of primary concern in a minilab paper processor operating in low-utilization conditions. Low utilization can be defined by how many 4x6 prints it takes to process to keep the developer in proper activity, based on the size of the developer tank. If the number of prints processed is at or below these levels, the proper choice of chemicals used becomes important. Extra care may be needed to keep the tank solutions in good condition. Use Table 3, as a guideline for choosing which chemical products to use.

Replenishment Rates

The replenishment rates in Table 2 are starting-point recommendations. The actual rates will depend on specific processing conditions such as the amount of paper processed and the proportion of high- or low-density prints.

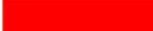
The bleach-fix replenishment rates assume minimum developer carryover. If carryover is greater than normal, increase the bleach-fix replenishment rate to maintain the bleach-fix chemical balance and pH level. Otherwise, problems such as retained silver may occur. Retained silver will cause print colors to look desaturated. See the equipment manual for specifications and adjustments for squeegees or squeegee rollers.

Agitation

Good agitation is important during the first few seconds of the developer and bleach-fix steps. If initial agitation is poor in the developer, development may be uneven. Poor initial agitation in the bleach-fix may not stop development uniformly, which can cause magenta streaks and non-uniformity.

Table 3

Tank Volume - Litres	125	250	375	500	750	1000	1250	1875	2500
5	Green	Green	Green	Green	Green	Green	Green	Green	Green
10	Red	Green	Green	Green	Green	Green	Green	Green	Green
15	Red	Green •	Green	Green	Green	Green	Green	Green	Green
20	Red	Red	Green •	Green	Green	Green	Green	Green	Green
25	Red	Red	Green •	Green •	Green	Green	Green	Green	Green
30	Red	Red	Red	Green •	Green	Green	Green	Green	Green
40	Red	Red	Red	Red	Green •	Green	Green	Green	Green
50	Red	Red	Red	Red	Green •	Green	Green	Green	Green

 Use EKTACOLOR PRIME SP Developer Replenisher LORR
 Use EKTACOLOR RA Developer Replenisher RT

• Periods of low utilization may require slight increases in replenishment rate

If Table 3 indicates that if the number of prints per tank size falls within the “Green Zone” of normal to mid-utilization, use the following chemicals:

- KODAK EKTACOLOR PRIME SP Developer Replenisher LORR
- KODAK EKTACOLOR PRIME SP Bleach-Fix Replenisher LORR
- KODAK EKTACOLOR PRIME Stabilizer and Replenisher LORR

If Table 3 indicates that if the number of prints per tank size falls within the “Red Zone” of low utilization, then use the following chemical products:

- KODAK EKTACOLOR Developer Replenisher RT
- KODAK EKTACOLOR Bleach-Fix Replenisher
- KODAK EKTACOLOR PRIME Stabilizer and Replenisher LORR

When operating your paper processor in low-utilization conditions, the following recommendations can help reduce the effects of low utilization:

- Top off all tank solutions with water at startup and shutdown of the processor.

- Replace the stabilizer tank solutions at least once a month, or as necessary, to keep them clean and free of biological growth. Increased yellow D-min is most commonly caused by the stabilizer. Replacing the stabilizer tank solution will usually correct the problem. In many cases, changing only the first tank or the first two tanks will be sufficient. If high yellow D-min persists, increase the replenishment rate for KODAK EKTACOLOR PRIME Stabilizer and Replenisher LORR from 195 mL/m² (18 mL/ft²) to 248 mL/ (m²23 mL/ft²) until your processing volume increases.
- If the LD speed falls outside the lower action limit, increase all replenisher rates, especially developer, by 10 to 20 percent or more.
- *Optional:* Under conditions of extremely low utilization, you can use KODAK EKTACOLOR RA Developer Additive (CAT No. 122 4930), and KODAK EKTACOLOR RA Bleach-fix Additive (CAT No. 803 6832) in mixing the replenishers. This adds further protection from oxidation to keep your chemicals more stable.
See directions for use in Kodak Publication Z-130, Section 4, available at www.kodaksino.com/.

APPENDIX A

MANAGING EVAPORATION

When water evaporates from processing solutions, the chemical components remain and the solutions become overconcentrated. Some evaporation will occur with any solution, and replenishers are designed to compensate for typical evaporation rates. However, if your processor operates at low production volume, evaporation can take place at a rate that is greater than the rate for which replenishers are designed.

Evaporation is more likely to be a problem when it occurs under these conditions:

- Tank solutions are up to temperature but no film or paper is being processed.
- Tank solutions are cooling down after shutdown. Because this down-time evaporation occurs after you shut down your processor, the level of processing solutions will be lower in the morning at startup.

The following procedures will help compensate for evaporation:

At daily start-up-With the recirculation system on, check the levels of the tank solutions. If the solution levels are not up to the top of the overflow tube, add water-at approximately operating temperature-to bring the solution up to the top of the overflow tube. If your processor has auto-top-off on the start-up prompts of your software, just push the “yes” key to top off with water.

At shutdown-With warm water, lightly squirt the top edges of the tank, the top of the rack, and the rollers and gears at the top of the rack to prevent buildup of dried chemicals. To avoid severely diluting the tank solutions, do not use too much water. Clean and rinse crossovers thoroughly to minimize chemical buildup.

TM/MC/MR: Flexicolor, Prime

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Operating Minilabs at Low Levels of Utilization Process C-41 and Process RA-4

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