Using KODAK EKTACOLOR PRIME Chemicals with the NORITSU QSS System Minilab

Kodak alaris

CURRENT INFORMATION SUMMARY

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The processing chemicals that you use in a particular minilab system depend on the type of processor the system incorporates and its process cycle. This publication describes the use of KODAK EKTACOLOR PRIME LORR Chemicals to process KODAK EDGE and ROYAL Papers in the new NORITSU QSS System Minilabs configured to the process cycle described in CIS-270. The combination of KODAK PRIME LORR Chemicals and the NORITSU QSS System Minilab will offer you a productive minilab system with efficient chemical features.

Kodak Alaris packages EKTACOLOR PRIME LORR Chemicals in sizes specially designed for minilabs.

Kodak Alaris technical publications are available on our website at www.kodakalaris.com/go/professional; select the link for "Processing Manuals." Current Information Summaries are available at the link for "Technical Information." We recommend that you check the website periodically for revised technical information

RECOMMENDED *KODAK* CHEMICALS

For the NORITSU QSS System Minilab, use KODAK EKTACOLOR PRIME LORR Chemicals. They offer convenience, cost savings, and a minimum of solution waste. EKTACOLOR PRIME SP Developer Replenisher LORR offers the advantages of a single-part concentrate for convenient handling and a low replenishment rate. In addition to the developer, you will need EKTACOLOR PRIME SP Bleach-Fix and Replenisher LORR and EKTACOLOR PRIME Stabilizer and Replenisher LORR. Catalog numbers for the chemicals vary by country; check with your local supplier of Kodak Alaris Products.

Table 1 lists the processing capacities of the bottles of concentrate in the to make 10-litre sizes.

Table 1 Processing Capacities

KODAK EKTACOLOR Chemicals	Processing Capacity with KODAK EDGE and ROYAL Papers (10-Litre Size)
PRIME SP Developer Replenisher LORR	One bottle of concentrate: 92.7 m2 (1000 ft2)
PRIME SP Bleach-Fix and Replenisher LORR	One bottle of concentrate: 185 m2 (2000 ft2)
PRIME Stabilizer and Replenisher LORR	One bottle: 51.6 m2 (556 ft2)

The NORITSU QSS System Minilab automatically delivers the developer, bleach-fix, and stabilizer replenisher solutions to the tanks in the processor. You will need to mix replenisher solutions for these chemicals. The processor automatically determines the amount of paper processed and delivers the necessary amounts of the replenishers to the processor tanks.

PROCESS SPECIFICATIONS

The specifications and replenishment rates for using EKTACOLOR PRIME LORR Chemicals in the NORITSU QSS System minilab are given in Table 2.

Table 2 Processing Steps and Conditions for Process RA-4 in the NORITSU QSS System Minilab

Solution/ Step	Time (sec)	Temp. °C (°F)	Starting-Point Replenishment Rates: PRIME SP Developer LORR, PRIME SP Bleach-Fix LORR, and PRIME Stabilizer LORR (mL/m2 [mL/ft2])
Developer	30	40.0 ± 0.3 (104.0 ± 0.5)	108 (10.0)
Bleach-Fix	30	35 to 40 (95 to 104)	54 (5.0)
Stabilizer	51 to 90	34 to 40 (93 to 104)	194 (18.0)*
Dry	As needed	Not over 96 (205)	—

* A four-tank counter current stabilizer is required for this rate. The replenisher rate for a three-tank stabilizer would be 388 mL/m2.

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.

Filtration

Processing solutions and wash water may contain insoluble materials. If you don't filter out these materials, they may stick to the paper, tank walls, rollers, and lines, and can damage the paper. It is also important to replace solution filters periodically so that a blocked filter does not reduce solution flow. Use the filters designed for the processor and recommended in the equipment manual.

Drying

The maximum drying temperature for KODAK EDGE and ROYAL Papers is 96°C (205°F).

Low Utilization

The number of prints that you produce each week determines the processor utilization. If your processor utilization is low, oxidation and evaporation will affect the activity of your processing solutions and may increase the D-min of the paper. During periods of low utilization, be sure to turn off the processor when it's not in use to avoid oxidation and evaporation. In extreme cases of low utilization, you may need to discard the chemicals in the processor and replace them with fresh tank solutions. You can often reduce high D-min in prints by replacing the stabilizer with fresh solution.

SAFE HANDLING OF PHOTOGRAPHIC CHEMICALS

Handle all chemicals carefully. When you mix solutions, wear goggles or a face shield, a protective apron, and protective gloves made from neoprene or nitrile rubber. Clean protective clothing after use to remove any chemical residue that can cause contamination. For more information about potential health hazards and safe handling of specific KODAK chemicals, see the chemical labels and the Material Safety Data Sheets (MSDSs) for the chemicals. MSDSs also provide regional contact information. MSDSs are available on the Kodak Alaris website at www.kodakalaris.com/es-mx/about/ehs.

PREPARING FRESH TANK SOLUTIONS

Follow these instructions to prepare working tank solutions for the NORITSU QSS System Minilab from EKTACOLOR PRIME LORR Chemical concentrates or mixed replenisher solutions. Observe all safe-handling precautions on the chemical labels and in the MSDS for each product.

Preliminary Steps

You will use the following mixed replenisher and concentrates to prepare developer, bleach-fix, and stabilizer tank solutions:

KODAK EKTACOLOR Chemical	
Mixed PRIME SP Developer Replenisher LORR	Mix with water and developer starter in amounts shown in Table 7
PRIME SP Bleach-Fix and Replenisher LORR concentrates	Mix with water and bleach-fix starter in amounts shown in Table 6
PRIME Stabilizer and Replenisher LORR concentrate	For each tank, mix one bottle of concentrate with water as described in Table 5

For the developer, you will need KODAK EKTACOLOR RA Developer Starter. Catalog (CAT) numbers for different regions are as follows:

Region	CAT No. for Developer Starter
U.S., Canada, Latin America-Northern	102 6681
Europe, Africa, Middle East	527 8957
Latin America-Southern	632 0238
Greater Asia Region	444 5839 403 6596
China	660 0315
Japan	660 0647

For the bleach-fix, you will need KODAK EKTACOLOR PRIME SP Bleach-Fix Starter. Catalog numbers for chemicals vary by country; check with your local supplier of Kodak Alaris Products.

You will need a measuring device for solution volumes up to 1.0 L, such as a graduated cylinder. You will also need to measure up to 10 litres of water.

You should mix the developer replenisher in a separate mixing vessel, such as the KODAK Chemical Mixing Bottle Kit (CAT No. 163 9780). The kit consists of two 10-litre mixing bottles.

Remove the racks from the processor tanks and rinse the racks and tanks with water. Be sure to drain all rinse water from the tanks and to close the drain valve before adding the solutions.

Stabilizer Fresh Tank Solution

Use one bottle of EKTACOLOR PRIME Stabilizer and Replenisher or EKTACOLOR PRIME Stabilizer and Replenisher LORR concentrate to mix the working tank solution in each of the four stabilizer tanks.

Table 5 Preparing Stabilizer Tank Solution from PRIME Stabilizer and Replenisher LORR Concentrate

For Each Stabilizer Tank	Volume with PRIME Stabilizer LORR
Add water to each tank	9.90 litres
Add one bottle of stabilizer concentrate	Entire contents of one bottle for each 10 litre of tank volume
Total volume per tank	10.0 litres

Bleach-Fix Fresh Tank Solution

Mix the bleach-fix tank solution directly from the concentrate. You will also need KODAK EKTACOLOR PRIME SP Bleach-Fix Starter with the new single-part EKTACOLOR PRIME SP Bleach-Fix and Replenisher LORR.

Be very careful to avoid contamination of the developer with bleach-fix.

Table 6 Preparing Bleach-Fix Tank Solution from EKTACOLOR PRIME SP Bleach-Fix and Replenisher LORR Concentrate

From PRIME SP Bleach-Fix and Replenisher LORR Concentrate	Volume for each one litre of tank volume
Add water to bleach-fix tank	450 millilitres
Measure and add contents from one-bottle of bleach-fix concentrate (each bottle makes 10 litres)	500 millilitres
Add KODAK EKTACOLOR PRIME SP Bleach-Fix Starter CAT No. 834 1133	50 millilitres
To make	1.0 litre

Developer Fresh Tank Solution

To ensure good performance, take special care in mixing the developer tank solution.

Table 7 Preparing Developer Tank Solution from Mixed EKTACOLOR PRIME SP Developer Replenisher LORR

From Mixed PRIME SP Developer Replenisher LORR	Volume for each one litre of tank volume
Add water to developer tank	290 millilitres
Add mixed PRIME SP Developer Replenisher LORR	670 millilitres
Add EKTACOLOR RA Developer Starter (see page 3 for CAT No.)	40 millilitres
To make	1.0 litre

Reinstalling the Racks and Bringing the Tank Solutions to Temperature

The tanks will appear only partially filled after you have added the solutions. When you reinstall the racks in the tanks, the racks will displace more solution volume to fill the tanks.

Install the racks by slowly lowering them into the tanks. When you have reinstalled all the racks and have verified that all the tanks are filled with solution, turn on the recirculation and heater system and bring the solutions up to operating temperature.

USING CONTROL STRIPS TO MONITOR THE PROCESS

Use KODAK Control Strips, Process RA-4 (box of 50, CAT No. 828 2170), to monitor process performance. For instructions on processing control strips, see the operator's manual for the NORITSU QSS System Minilab. For information on the use and diagnostic features of the control strips, see Kodak Alaris Publication No. Z-130, Using KODAK EKTACOLOR Chemicals, Section 7, "Process Monitoring and Troubleshooting with KODAK Control Strips, Process RA-4." This publication is available on our website at www.kodakalaris.com/go/professional.

To calculate control-strip aim values for process monitoring, you will need to apply process adjustment factors. Use the adjustment factors in addition to the correction factors that are supplied with the control strips.

After reading the densities of the supplied reference strip on your densitometer, first apply the correction factors packaged with the reference strip. Then add the values from the following table. The corrected density values are the aim values for your batch of control strips. You will need to apply the adjustment factors each time you switch to a new batch of control strips.

Table 8 Process Adjustment Factors

Measurement	R	G	B
Black (BP)	0	+1	-3
High (HD)	+2	+4	-3
Low (LD)	+5	+5	-2
D-min	0	0	0

SILVER RECOVERY

The overflows from the bleach-fix and stabilizer tanks are collected in separate effluent tanks in the NORITSU QSS System Minilab. When an effluent tank is full, the processor alerts you to drain the tank.

Typically, silver concentration in the bleach-fix effluent tank will be up to 8 g/L; silver concentration in the stabilizer effluent tank will be 0.2 to 0.6 g/L.

You can effectively use common silver-recovery methods with the combined effluents from both effluent tanks. If your lab has other processors, you can combine the effluent from the NORITSU QSS System Minilab with the other effluent solutions and use your current silver-recovery methods.

Publications on silver management that include recommendations and descriptions of silver-recovery options are available in the Silver Management section of the Kodak Alaris website at www.kodakalaris.com/es-mx/about/ehs.

If local recycling is not an option, dispose of the empty bottles and the package with your normal solid waste.

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