Revised 2/92

Bleach

FUNCTION

The bleach converts metallic silver into silver bromide, which is converted to soluble silver compounds in the fixer. During bleaching, iron (III) EDTA is changed to iron (II) EDTA.

Fe^{+++} EDTA + Ag^0 + Br^- →

Fe^{++} EDTA + AgBr

COMPONENTS

Oxidizing Agent:

Iron in the form of ferric ammonium EDTA

The ferric ammonium EDTA converts metallic silver into silver bromide. Iron (III) is reduced to iron (II) in this reaction. Iron (II) is then converted back to iron (III) by aeration so that satisfactory bleaching can continue.

Fe^{++} EDTA + O_2 → Fe^{+++} EDTA

Note: If aeration is insufficient, control plots will indicate a red color balance.

Halide:

Bromide

Bromide combines with metallic silver to form silver bromide.

Sequestering Agent:

EDTA (Ethylenediaminetetraacetic acid)

The sequestering agent helps prevent yellow (iron) D-min stains. In a fresh tank solution, EDTA is provided by the starter. The level of EDTA is maintained by carryover from the pre-bleach.

PREPARING A FRESH TANK SOLUTION

Note: These instructions are for mixing solutions from KODAK Bleach Replenisher, Process E-6AR (5-gallon flexible container).

For each litre of tank solution, mix 500 mL of concentrate, 480 mL of water, and 20 mL of starter.

SPECIFICATIONS

Parameter	Aim	Tolerance	Acceptable Range
Time	6 minutes	± 15 seconds	6 to 8 minutes
Temperature	92 to 103°F (33.3 to 39.4°C)	—	—
Replenishment Rate	Depends on machine type; refer to KODAK Publication No. Z-119.		
Specific Gravity			
Fresh Tank Solution	1.130 at 80°F (27°C) 1.127 at 100.4°F (38°C)	± 0.010	—
Seasoned Tank Solution	1.190 at 80°F (27°C) 1.187 at 100.4°F (38°C)	± 0.070	1.120 to 1.260
Agitation	2-second air burst every 10 seconds ($^5/_8$-inch [17 mm] solution rise)*	—	—

*For rack-and-tank machines. Use continuous air if your machine is not equipped with a burst system.

Fe = iron

Fe^{++} EDTA = ferrous ammonium EDTA or iron (II) EDTA

Fe^{+++} EDTA = ferric ammonium EDTA or iron (III) EDTA

Ag^0 = metallic silver

Br^- = bromide ion

AgBr = silver bromide

O_2 = oxygen