

REPLENISHED SYSTEMS

for 3–5 minutes at 20°C. At higher temperatures, fixing will take a shorter time. Use the same amount of agitation for fixation as for development.

In general, fix film for twice the time it takes the emulsion to clear. To find the clearing time: let a drop of fixer act on a piece of unprocessed film for about 30 seconds; immerse the film in fixer; the time it takes for the spot to disappear is the clearing time. Fixing time must not be more than four times the initial clearing time.

Do not use non-rapid (sodium thiosulphate) fixers with DELTA films.

WASHING

The washing times recommended by the processor manufacturer are usually adequate for washing film to optimum levels of permanence.

For washing film, the ideal water hardness range is 100–300ppm of equivalent calcium carbonate, but this is not essential. If water is particularly soft (less than 50ppm), it may be advisable to meter an epsom salts (magnesium sulphate) solution into the wash water to maintain short wash times and to prevent excessive emulsion swelling, frilling or reticulation. If water is particularly hard, it can help to use an anti-scale filter in the cold supply before the mixer. A water filter will aid clean working.

Water hardness can be tested using a simple kit or determined by contacting your local water supplier. Water hardness in some areas can vary with the seasons.

Where a static tank is available, a final rinse in water to which a few drops of ILFORD ILFOTOL wetting agent has been added will aid rapid and uniform drying. Adding an excessive amount of wetting agent, or using non-photographic wetting agents (eg washing up liquid), can cause smears and streaks on the film.

DRYING

The drying recommendations given by the processor manufacturer are usually adequate for drying films. Occasionally, however, films can be overdried. Both to prevent damage to the film and to conserve energy, keep the dryer temperature at the lowest setting possible that will just dry the film.

REPLENISHMENT

Replenishers replace the chemicals used up during processing, so that solution volume, activity and processing times can be maintained.

The following tables give a guide to replenishment rates. Optimum rates for a particular set-up will be found using a system of process control. If a large amount of DELTA film is to be processed, the fixer replenishment rates may need to be increased by approximately 50%.

Solution	ml for each 36 exposure 35mm film
ILFOTEC HC	22
ID-11	9
MICROPHEN	9
PERCEPTOL	21
ILFOTEC DD	50
ILFOTEC RT RAPID	18
IN-1	13
HYPAM	40

Multiplication factor for other film sizes

24 exposure 35mm film	x ² / ₃
120 rollfilm	x1
220 rollfilm	x2
20.3x25.4cm sheet	x1
10.2x12.7cm sheet	x ¹ / ₄

PROCESS CONTROL

To process film to a consistently high standard, it is essential that a method is available to monitor the condition and activity of the processing solutions.

Fixer activity and condition may be simply monitored with silver estimating papers and a clearing time test. Developer condition is best monitored using process control strips. ILFORD FILM PROCESS CONTROL STRIPS are specially designed for this purpose and are pre-exposed so that when they are processed they have three density steps. The fourth step – maximum density – is not used. Developer performance may be monitored by visual comparison or with a densitometer. ILFORD FILM PROCESS CONTROL STRIPS are suitable for all processing systems, including deep tanks, rotary processors, dip and dunk machines, short leader and roller transport processors. Alternatively, processing staff can expose their own control strips if they have a sensitometer.

ILFORD Limited Mobberley Cheshire

ILFORD distributor