

Cinechem

TECHNICAL INFO SHEET

Cinechem Motion Picture Products

ECP-2E Chemistry

I. DESCRIPTION

Cinechem Motion Picture Products are designed to get the best results from all makes/types of film. They can be used in different types of processors under variable conditions.

All the products are liquid concentrates that mix easily with water.

II. PROCESSING STEP FUNCTIONS

Colour Developer

The colour developer causes metallic silver and colour dye images to appear in the emulsion. The colour developer composition and functions are described below.

- Colour Developing Agent:
The colour developing agent reduces the exposed silver halides to metallic silver. The colour developing agent itself is thus oxidized and its oxidation by-products react with the neighbouring couplers to form colour dye images.
- Preservative:
The preservative inhibits aerial oxidation of the colour developing agent by preventing the colour developer from absorbing oxygen from the air.
- Accelerator:
The accelerator increases the rate of development by making the colour developer alkaline.
- Restrainer:
The restrainer is added to the colour developer in order to restrain chemical fog formation by increasing the halogen concentration

Since colour developer composition variability is as detrimental to photographic properties as processing time, temperature, and solution pH fluctuations, developer composition needs to be strictly controlled.

Stop Bath

An acid stop bath halts the development action of the colour developer in the emulsion layer. The development action is halted quickly by the stop bath when a dye image of desired density has been obtained. The stop bath also removes any colour developing agent retained in the emulsion.

Wash

The wash bath removes any stop solution on the film or retained in the emulsion layer so as to prevent contamination of the bleach with the stop bath.

Bleach

The bleach converts metallic silver formed during development to silver halides which can be removed in the fixer.

Wash

This wash removes any bleach on the film or retained in the emulsion.

Fixer

The fixer removes the unexposed silver halide and silver halide produced by the bleach bath. The fixer composition and function are described below.

- Fixing Agent:
The fixing agent converts silver halides to a silver thiosulphate complex which is soluble in water.
- Preservative:
The preservative prevents decomposition of thiosulphate in the acid solution. Two kinds of sulphite are used for purposes of pH adjustments.

Wash

This wash bath removes any fixer clinging to the film or retained in the emulsion. This step is necessary to ensure permanence of the dye image and to prevent staining.

Final Rinse

The final rinse prevents uneven drying and water mark problems.

III. PROCESS PARAMETERS

	Time	Temperature (°C)	Replenishment Rate / 100ft (30.5 m) of 35 mm film
Developer	180"	36.7 ± 0.1	690 ml
Stop Bath	40"	27.0 ± 1.0	770 ml
Wash	40"	27.0 ± 3.0	1.2 L
UL Bleach	60"	27.0 ± 1.0	400 ml
Wash	40"	27.0 ± 3.0	1.2 L
Fixer	40"	27.0 ± 1.0	200 ml
Wash	60"	27.0 ± 3.0	1.2 L
Final Rinse	10"	27.0 ± 3.0	400 ml

The table above shows recommended replenishment rates and processing temperatures. As with other chemistries, differences between film brands and production volumes mean that you may need to fine-tune your process for optimum results.

IV. MIXING INSTRUCTIONS FOR FRESH SOLUTIONS

Cinechem ECP-2 Developer	Water	Conc Part A†	Conc Part B	Replenisher	Starter*	To make
Replenisher	700 ml	200 ml	100 ml	-	-	1000 ml
Tank	744 ml	104 ml	52 ml	-	100 ml	1000 ml
Tank from Replenisher	380 ml	-	-	520 ml	100 ml	1000 ml

*Please note that the starter to be used is Cinechem ECP-2 Developer Starter.

†ECP-2 Developer Replenisher part A concentrate must be used for preparation of fresh replenisher. ECP-2 Developer Regenerator 60% part A concentrate is only suitable for preparation of regenerated developer replenisher from collected developer overflows, and cannot be used to make fresh replenisher. Also, ECP-2 Developer Replenisher part A concentrate is not suitable for and cannot be used for regeneration of developer overflows. Please see the ECP-2 Chemistry Regeneration Technical Information Sheet for details of developer regeneration using Cinechem ECP-2 chemistry.

Cinechem ECN-2 / ECP-2 Stop Bath	Water	Conc	To make
Replenisher	950 ml	50 ml	1000 ml
Tank	950 ml	50 ml	1000 ml

Cinechem ECN-2 / ECP-2 Bleach	Water	Conc	To make
Replenisher	400 ml	600 ml	1000 ml
Tank	400 ml	600 ml	1000 ml

Please see the ECP-2 Chemistry Regeneration Technical Information Sheet for details of bleach recycling / regeneration using Cinechem ECP-2 chemistry.

Cinechem ECN-2 / ECP-2 Fixer	Water	Conc	To make
Replenisher	700 ml	300 ml	1000 ml
Tank	700 ml	300 ml	1000 ml

Please see the ECP-2 Chemistry Regeneration Technical Information Sheet for details of fixer recycling / regeneration using Cinechem ECP-2 chemistry.

Cinechem ECN-2 / ECP-2D Final Rinse	Water	Conc	To make
Replenisher	990 ml	10 ml	1000 ml
Tank	990 ml	10 ml	1000 ml

V. PRODUCT LINE-UP

Product	Available sizes conc	
ECP-2 Developer Replenisher Part A	210 L conc	1000 L conc
ECP-2 Developer Part B	210 L conc	640 L conc
ECN-2 / ECP-2 Stop Bath	210 L conc	1000 L conc
ECN-2 / ECP-2 Fixer	210 L conc	1000 L conc
ECN-2 / ECP-2 Bleach	210 L conc	1000 L conc
ECN-2 / ECP-2 Final Rinse	210 L conc	1000 L conc

Other sizes available upon request

VI. STORAGE

The concentrates must not be stored below 5°C and above 30°C for a long period of time. Please be aware that the volume of replenisher solution prepared should not exceed 2 weeks expected consumption. Developer replenisher tanks should be fitted with a floating lid (or equivalent) to prevent aerial oxidation.

VII. CHEMICAL WARNING

All photographic processing solutions can exert harmful effects when brought into contact with human tissue to a greater or lesser extent, depending on the nature of the solution and its concentration. All users of such solutions should exercise the greatest care to avoid the chemicals contacting the skin, eyes or other parts of the body.

Always wear solution resistant gloves and effective eye protection. In case of accidental contact with processing solutions wash the affected part with plenty of clean cold running water. Consult a medical doctor. Some photographic solutions produce irritating vapours therefore thorough ventilation is essential.

Do not inhale air above processing solutions.

Always read the MSDS and the hazard information on the packs of solution concentrate before attempting to handle the solutions.

The MSDS (Material Safety Data Sheets) are available on request if you do not have a copy.