

Very Low Replenishment Rate RA4 Chemicals for Fast Processing

I. DESCRIPTION

FUJIFILM Europe's recommended very low replenishment rate chemistry to be used in today's "analogue" and "digital" type Minilab having the feature of fast RA4 process is **EnviroPrint Developer Replenisher MP45 AC** in combination **EnviroPrint FP Bleach-Fix Replenisher MR**. These products have been extensively tested and have now become a reference in the Minilab market for fast processing. By simply mixing a more concentrated fresh tank solution and adjusting the replenishment rate accordingly, excellent print quality is obtained. Besides, these products are odour free homogeneous liquids that easily mix with water and are designed to run at a low replenishment rate. These single part products also reduce the risk of mixing errors, package waste and the required storage space.

All products give excellent process stability and can be installed in processes having a development time as short as 22 seconds.

Alternatively, Fast process minilabs with lower throughputs are advised to use **EnviroPrint FP Developer MR** – a medium replenishment rate AC-product ideally suited to most makes of minilab under a wide range of usage conditions. Instructions for using this product may be found in the Technical Information Sheet "RA4 FP chemistry for fast processing" or in the latest edition of the FUJIFILM Europe Technical Bulletin "Minilab Chemical Guide". Please consult your FUJIFILM representative for product availability.

EnviroPrint FP Super Stabilizer & Replenisher is the best choice for fast processing, allowing a stabilizer time as low as to 50 seconds if the replenishment rate has been adjusted accordingly.

II. PROCESS PARAMETERS

	Time	Temperature (°C)	Replenishment Rate ml/m ²
EnviroPrint Developer Rep. MP45 AC ⁽¹⁾	33"	39.0 ± 0.3	60
	27"	39.5 ± 0.3	60
	22"	40.0 ± 0.3	70 - 75
EnviroPrint FP Bleach-Fix Repl. MR	22 - 33"	36 - 40	70 - 100
EnviroPrint FP Super Stabilizer & Repl	50 - 90"	34 - 40	200- 400

The wide variety of "fast" processing equipment as well as the different paper brands on the market makes it difficult to standardise the process parameters. The table above shows recommended replenishment rates and processing temperatures. As with other chemistries, differences between paper brands and processing equipment may mean that you need to fine-tune your process. For more information please contact your FUJIFILM representative or consult the **FUJIFILM Europe Minilab Chemical guide**.

III. MIXING INSTRUCTIONS

EnviroPrint Developer Replenisher MP45 AC	Water	EnviroPrint Developer MP45 AC concentrate	Replenisher	Starter ⁽¹⁾	To make
Replenisher	740 ml	260 ml	/	/	1000 ml
Tank : 33 sec, 39.0°C	840 ml	100 ml	/	60 ml	1000 ml
27 sec, 39.5°C	850 ml	100 ml	/	50 ml	
22 sec, 40.0°C	860 ml	100 ml	/	40 ml	
Tank from Replenisher					
33 sec, 39.0°C	555 ml	555 ml	385 ml	60 ml	1000 ml
27 sec, 39.5°C	565 ml	565 ml	385 ml	50 ml	
22 sec, 40.0°C	575 ml	580 ml	385 ml	40 ml	

⁽¹⁾ Please note that a special starter (**RA4 Quick Starter**) is needed.

EnviroPrint FP Bleach-Fix MR	Water	Concentrate	EnviroPrint Bleach-Fix MP Starter AC	To make
Replenisher	500 ml	500 ml	/	1000 ml
Tank, Option 1	705 ml	275 ml	20 ml	1000 ml
Tank, Option 2 †	670 ml	330 ml	/	1000 ml

† Option 2 requires 8-12 hours chemistry recirculation in the processor (for example, overnight) before the bleach-fix is ready for use.

EnviroPrint FP Super Stabilizer & Repl	Water	Part A	To make
Tank & Replenisher	992 ml	8 ml	1000 ml

IV. pH AND DENSITY SPECIFICATIONS

pH (25°C)	Fresh		Seasoned	
	Tank	Replenisher	Tank	Tolerance
EnviroPrint Developer MP45 AC				
33 sec, 39.0°C	10.10	12.55	10.15	± 0.05
27 sec, 39.5°C	10.20			
22 sec, 40.0°C	10.35			
EnviroPrint FP Bleach-Fix MR				
Option 1	6.00	5.70	To be advised	± 0.20
Option 2	5.80	5.70		± 0.20

Density (20°C) g/cm ³	Fresh			Seasoned	
	Tank	Replenisher	Tolerance	Tank	Tolerance
EnviroPrint Developer MP45 AC 33 sec, 39.0°C 27 sec, 39.5°C 22 sec, 40.0°C	1.028 1.026 1.023	1.043	± 0.003	1.050	± 0.003
EnviroPrint FP Bleach-Fix MR Option 1 Option 2	1.077 1.090	1.135 1.135	± 0.005 ± 0.005	to be advised	± 0.010
EnviroPrint FP Super Stabilizer	0.998 - 1.002			~ 1.000	

V. 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.

VI. 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.