

### Super Unilec and Unimatic Fixers

#### REPLACEMENT OF UNILEC, XL-REJUVENATOR AND UNIMATIC LR FIXERS

#### **SUPER UNILEC FIXER**

A fixer concentrate for general use on all types of film or paper processor, and also for continuous desilvering and recycling. For recycled systems, adjustment of the pH and the addition of water can be necessary to keep the pH and the density of the replenisher within tolerance.

Super Unilec now replaces Unilec, XL-Rejuvenator and Unimatic LR fixers. Please see the Super Unilec Product Information Sheet (PIS 401) for full product details. Instructions for the use of Super Unilec can be found in this Technical Information Sheet. There is no need to discard your existing fixer when converting from your current product to Super Unilec; you can continue to replenish or regenerate your fixer when you make the change to Super Unilec without any problems.

For further information on these changes, please also see the latest version of our Fixing Systems Technical Bulletin, version E6 01/09. Your local FUJIFILM Europe representative can also give technical advice if required.

#### **I. MIXING INSTRUCTIONS - SIMPLE REPLENISHMENT C41**

	<b>Tank solution</b>	<b>Replenisher</b>	<b>Replenishment Rate</b>
Water	800 ml	800 ml	
Super Unilec conc.	200 ml	200 ml	
To make :	1000 ml	1000 ml	30 ml/m 135 film

or :

	<b>Tank solution</b>	<b>Replenisher</b>	<b>Replenishment Rate</b>
Water	800 ml	750 ml	
Super Unilec conc.	200 ml	250 ml	
To make :	1000 ml	1000 ml	15 ml/m 135 film

or :

	<b>Tank solution</b>	<b>Replenisher</b>	<b>Replenishment Rate</b>
Water	800 ml	800 ml	
Unimatic conc.	200 ml	200 ml	
To make :	1000 ml	1000 ml	30 ml/m 135 film

## II. MIXING INSTRUCTIONS – SIMPLE REPLENISHMENT E6

	Tank solution	Replenisher	Replenishment Rate
Water	900 ml	900 ml	
Unimatic conc.	100 ml	100 ml	
To make :	1000 ml	1000 ml	36 ml/m 135 film

## III. MIXING INSTRUCTIONS – SIMPLE REPLENISHMENT RA4

	Tank solution	Replenisher	Replenishment Rate
Water	800 ml	800 ml	
Super Unilec conc.	200 ml	200 ml	
To make :	1000 ml	1000 ml	200-290 ml/mb <sup>2</sup>

## IV. MIXING INSTRUCTIONS – RECYCLED / REGENERATED SYSTEMS

Please see the Fixing Systems Technical Bulletin v E6 / 01-09 for full information regarding use of Super Unilec fixer in recycled / regenerated fixer systems.

## V. AIM VALUES FOR FRESH CHEMISTRY

Product		TANK SOLUTION			REPLENISHER SOLUTION		
		Density g/cm <sup>3</sup>		pH	Density g/cm <sup>3</sup>		pH
		(20 °C)	(25 °C)	(25 °C)	(20 °C)	(25 °C)	(25 °C)
Unimatic (1+4)	Fresh	1.080 ± 0.010	1.079 ± 0.010	6.50 ± 0.20	1.080 ± 0.010	1.079 ± 0.010	6.50 ± 0.20
	Seasoned	1.085 ± 0.020	1.084 ± 0.020	6.40 ± 0.20	-	-	-
Unimatic (1+9)	Fresh	1.041 ± 0.010	1.040 ± 0.010	6.50 ± 0.20	1.041 ± 0.010	1.040 ± 0.010	6.50 ± 0.20
	Seasoned	1.065 ± 0.010	1.064 ± 0.010	6.50 ± 0.50	-	-	-
Super Unilec (1+3) (replenisher)	Fresh	-	-	-	1.110 ± 0.010	1.109 ± 0.010	7.50 ± 0.20
	Seasoned	-	-	-	-	-	-
Super Unilec (1+4)	Fresh	1.087 ± 0.010	1.086 ± 0.010	7.50 ± 0.20	1.087 ± 0.010	1.086 ± 0.010	7.50 ± 0.20
	Seasoned	1.090 ± 0.010	1.089 ± 0.010	6.70 ± 0.50	-	-	-
Super Unilec (1+9)	Fresh	1.044 ± 0.010	1.043 ± 0.010	7.50 ± 0.20	1.044 ± 0.010	1.043 ± 0.010	7.50 ± 0.20
	Seasoned	1.065 ± 0.010	1.064 ± 0.010	6.70 ± 0.50	-	-	-
Super Unilec (recycled systems)	Equilibrated	1.090 ± 0.020	1.089 ± 0.020	6.70 ± 0.50	1.100 ± 0.020	1.099 ± 0.020	6.70 ± 0.50

## General Note :

Ammonia based fixing solutions for colour paper and films can operate over a relatively wide range of pH - from 6.2 to 7.2. Beyond 7.2 there will be release of ammonia fumes, which will be unacceptable because of the smell. Providing a minimum density of 1.070 g/cm<sup>3</sup> is maintained, there should be no problems in obtaining adequate fixing whilst silver concentration does not exceed 10 g/litre or, if continuous desilvering is practised, the concentration of halide (iodide, bromide and chloride) is not too high. Values cannot be set for this effect because the type of emulsion plays an important role. If fixing, particularly in high speed films, is incomplete under these conditions it is likely that halide concentration is too high. Analysis of halides in fixers is quite difficult so the simplest remedy is to add fresh fixer solution to the system and check whether this improves fixing.

The halide can easily rise in concentration because silver halide is removed from the emulsions by the fixer and if the silver is removed by electrolysis the halide still remains.

High silver concentration has the most effect in reducing fixing rate (or inability to remove silver thiosulphate complex in the wash tank) but high halide also has an inhibiting effect.

## **VI. STORAGE**

The fixer concentrate should be stored above 5°C to prevent crystallisation. Storage temperature above 40°C will cause premature ageing.

## **VII. HANDLING PROCESSING SOLUTIONS**

Always read the hazard information on the drum, cube or multibox containing the concentrate, before attempting to handle the solutions. Read the MSDS (Material Safety Data Sheets), these are available on request if you do not have a copy. You can also consult them on the Internet on our website <http://www.fujifilm.eu/feb>.

Only customers of FUJIFILM Europe can have access to this password-protected section. You have to register first to obtain a user ID and a password. After login you then get a list of all the products you have bought during the last two years. You also have the ability to ask for a specific MSDS in another language.

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. Wash with an acidic soap and rinse thoroughly with water. Consult a medical doctor. Some photographic solutions produce irritating vapors, therefore thorough ventilation is essential. Do not inhale air above processing solutions.