

## PRODUCT INFORMATION

### RA-4 CD-MR 108 Colour Developer Replenisher *Medium Rate*

RA-4 CD-MR 108 is a 1-part colour developer, designed for the processing of RA-4 colour papers in mini-labs and leaderbelt developing machines. Recommend for labs with medium to high utilisation.

RA-4 CD-MR 108	Pack with 4 x 1 L conc. for 4 x 10 L replenisher	for 370 m <sup>2</sup>	REF 12210
	Canister with 60 L conc. for 600 L replenisher	for 5.555 m <sup>2</sup>	REF 12215
RA-4 CD-S	Colour Developer Starter, 2 L concentrate	for 50 litres	REF 12810
CD-Additiv Plus	Antioxidant, 2 x 0.5 L concentrate	for 250-500 L	REF 16222




MR 108 stands for Medium Rate: for a replenishment rate of 108 ml/m<sup>2</sup>- referring to the positioning between Low Rate at 80 ml/m<sup>2</sup> and Standard Rate at 160 ml/m<sup>2</sup>. The modern 1-part formula enables an easy and safe handling and provides a very good balance between yield and costs.

CD-MR 108 is designed and intended for machines with medium to high utilisation. Medium utilisation is given, when the CD-MR 108 working tank volume is exchanged with CD-MR 108 replenisher within approx. 2 weeks, corresponding to a consumption of approx. 9 m<sup>2</sup> colour paper per every litre of CD-MR 108 working solution within approx. 2 weeks.

**Colour Developer Starter CD-S** is required, when colour developer working solution is to be prepared fresh.

**CD-Additiv Plus** is an optional antioxidant. It protects the colour developer from premature oxidation at low utilisation.

#### MIXING OF REPLENISHER

Water	CD-MR 108 Conc.	Replenisher
		
900 ml	100 ml	1 L
<b>9 L</b>	<b>1 L</b>	<b>10 L</b>
540 L	60 L	600 L

Warm water (> 25 °C) promotes fast and good mixing.

Mixing time: approx. 1-2 minutes. Only as much replenisher should be prepared, as will be used up within 1-2 weeks. The tank must be covered and protected from access of air.

#### OPTIONAL USE OF CD-ADDITIV PLUS

**Addition of CD-Additiv Plus:**

**One time after mixing of replenisher as well as weekly directly to the working solution.**

**Replenisher:** 4 ml CD-Additiv Plus per litre of CD-MR 108, one-time after mixing

**Working solution:** 2 ml CD-Additiv Plus per litre of CD-MR 108, once per week

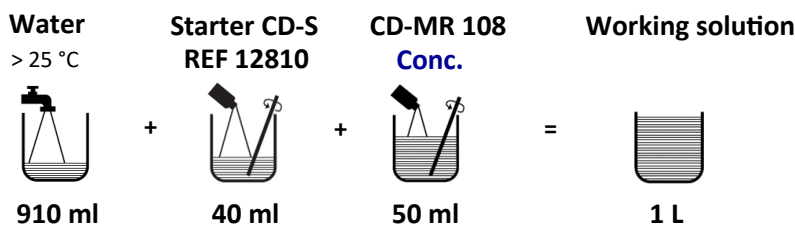
## MIXING OF WORKING SOLUTION

Mixing of working solution is required when the working tank of the machine is to be refilled, e.g. when installing a machine or after cleaning the tank during maintenance work.

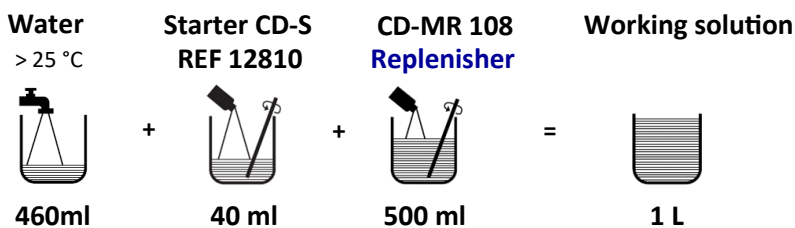
For mixing of working solution 2 different options are possible :

**Option 1: Direct, by using concentrate**

**Option 2: Indirect, by using previously mixed replenisher**



**OPTION 1:  
DIRECT WITH CONCENTRATE**



**OPTION 2:  
INDIRECT WITH REPLENISHER**

Corresponding to the size of the respective Colour Developer working tank, the quantities for water, Starter CD-S and CD-MR 108 concentrate, resp. CD-MR 108 replenisher are to be multiplied.

Always start mixing with the full amount of water, then add Starter CD-S and concentrate or replenisher. Mixing time approx. 1-2 minutes.

## PROCESSING PARAMETERS

**Time:** 45 s    **Temperature:** 38°C ± 0,3°C    **Replenishment rate:** 108 ml/m<sup>2</sup>

The data given are guideline values that may deviate in practice, depending on the individual developing machine used, on the type of colour paper and on the utilisation. The specifications for time and temperature should not be undercut; slightly longer time or higher temperature is possible.

Tempered working solution is subject to continuous evaporation of water. Accordingly, the evaporation should be compensated for by a daily addition of water to avoid an increase in the concentration of the working solution. The daily addition of water to the working solution is approx. 0.5 -1 % of the tank volume - e.g. for a tank with 20 litres tank capacity, the addition is approx. 100-200 ml.

Any tempering has a stressing effect on the shelf life of the chemicals, therefore the processor should be switched off immediately after the end of work, the timer should be programmed accordingly.

## HIGH SPEED PROCESSING

Minilabs with High Speed mode allow processing at a shortened developing time, e.g. of 33 seconds. The temperature of the colour developer working solution must then be set to 40°C.

For minilabs with particularly short processing times of approx. 20 -22 seconds, such as KIS DKS 15xx, 16xx, 17xx, we recommend the use of Calbe RA-4 3000 chemicals, which are specially designed for shortest processing time.

## OCCUPATIONAL SAFETY

Handling of photographic chemicals is safe, if used properly and protective measures are followed. Hazard and precautionary information can be found on the label (H and P phrases, hazard symbol) and in the safety data sheet. Personal protective equipment should include safety goggles or face shield, protective gloves and a lab coat or apron.

## STORAGE

RA-4 CD-MR 108 concentrates should be stored dry, frost-proof and out of the reach of children. The maximum temperature range is between 5°C and 25°C. Storage temperatures between 10°C and 20°C are ideal.

## SHELF LIFE

RA-4 CD-MR 108 concentrates in unopened, originally sealed bottles and canisters have a shelf life of approx. 2 years.

## DISPOSAL

Photographic chemicals - concentrates or used baths - must not be discharged into the public sewer system. These chemicals must be discarded by commercial waste treatment companies, who properly treat and dispose of in accordance with legal regulations. Further information can be found in the safety data sheet.