

#9240 JOB C-41 Developing Kit

JOB C-41 Negative Developing Kit (2,5L working solution) is a chemical processing kit for color negative films designed especially for rotary processing. The developing kit should only be used in manual processing if temperature and agitation can be fully controlled. Best results may only be expected with precise temperature control and constant agitation.

All the processing chemical is concentrated solution to make max of 2,5L working solution which allows processing up to 40 rolls of film (135-36exp or 120 films). The JOB C-41 Negative Developing Kit combines low environment load with excellent developing performance.

1. Contents of JOB C-41 Color Negative Developing Kit (2,5L)

Process	Chemicals	Bottles	Stock solution	Working sol.	Capacity
Color dev.	N1 : CD Part-A	1	250 ml x 1	for 2,5 L	40 rolls / 135-36
	N1 : CD Part-B	1	75 ml x 1		
	N1 : CD Part-C	1	25 ml x 1		
Bleach	N2 : BL	1	625 ml x 2	for 2,5 L	
Fixer	N3 : FX	1	525 ml x 1	for 2,5 L	
Stabilizer	N4 : STB	1	25 ml x 1	for 2,5 L	

- 2,5 l of working solutions can be made by diluting the stock solutions above.
- It is possible to make the needed amount of working solutions by measuring corresponding volume of stock solutions according to the amount of films to be processed.

Please note that:

- The stock solution of N1: CD bottles are divided into Part-A, Part-B and Part-C bottles.
- 2 bottles of 625 ml N2: BL stock solution are packed in each kit.
- The precautions are indicated on each label on bottles or package.

2. How to make working solutions

- Please measure the amount of water accurately and warm up water to $30\pm 5^{\circ}\text{C}$ before diluting the stock solutions.
- In case working solution needs to be stored for a while, it should be stored in an air-tight bottle in order to avoid oxidization.
- Don't mix chemicals with each other to avoid possible toxic gas and heat from being generated.
- Appropriate results cannot be given even if only a very small amount of other processing solution is contaminated into "Color developer solution".
- Please always prepare water amount first. Then pour part 1 into water and mix well (about 30 sec.) before mixing with part 2 (in case of more than 1 part).

How to make 2,5L working solutions

Process	Chemicals	Water	Part-A	Part-B	Part-C	Total
Color dev.	N1 : CD	1075 ml	+ 125 ml	+ 37,5 ml	+ 12,5 ml	= 1250 ml
Bleach	N2 : BL	625 ml	+ 625 ml	-	-	= 1250 ml
Fixer	N3 : FX	987,5 ml	+ 262,5 ml	-	-	= 1250 ml
Stabilizer	N4 : STB	1237,5 ml	+ 12,5 ml	-	-	= 1250 ml

- **Color Developer:** Pour Part-A 250ml (1 bottle) into 2150ml of water and stir to be a clear solution. Then add Part-B 75ml (1 bottle) to be clear solution. Finally, add part-C 25ml (1 bottle) and stir it to be 2500ml of N1: CD working solution.
- **Bleach:** pour 2 bottles (625ml x 2) of N2: BL stock solution into 1250ml of water and stir it to be 2500ml of working solution.
- **Fixer:** pour 525ml (1 bottle) of N3: FX stock solution into 1975ml of water and stir it to be 2500ml of working solution.
- **Stabilizer:** pour 25ml (1 bottle) of N4: STB stock solution into 2475ml of water and softly stir it to be 2500ml of working solution.
- The working solution can be stored in accordance with the instructions 4 below.

How to make 1,25L working solutions

Process	Chemicals	Water	Part-A	Part-B	Part-C	Total
Color dev.	N1 : CD	2150 ml	+ 250 ml	+ 75 ml	+ 25 ml	= 2500 ml
Bleach	N2 : BL	1250 ml	+ 625 ml x 2	-	-	= 2500 ml
Fixer	N3 : FX	1975 ml	+ 525 ml	-	-	= 2500 ml
Stabilizer	N4 : STB	2475 ml	+ 25 ml	-	-	= 2500 ml

- Stock solution can be measured to make needed working solutions in accordance with the amount of films to be processed.
- It is possible to process 20 rolls of films at most with using 1,25L of working solutions.
- The remaining stock solutions can be stored in the original bottles.

How to make 1L working solutions

Process	Chemicals	Water	Part-A	Part-B	Part-C	Total
Color dev.	N1 : CD	860 ml	+ 100 ml	+ 30 ml	+ 10 ml	= 1250 ml
Bleach	N2 : BL	500 ml	+ 500 ml	-	-	= 1250 ml
Fixer	N3 : FX	790 ml	+ 210 ml	-	-	= 1250 ml
Stabilizer	N4 : STB	990 ml	+ 10 ml	-	-	= 1250 ml

- In case a small amount of film is to be processed, it is possible to make as little working solution as possible.
- For instance, the chart above shows how to make 1L of working solutions to process 16 rolls of film at the most.
- In case you want to process less films, the amount of water and stock solutions can be calculated accordingly, but please note the minimum amount of working solutions may be required depending on the processing methods you use.

3. Processing condition (with 1L of working solution, 135-36exp

Process	Chemicals	Temp. (°C)	Times setting & numer of films			
			1-4 rolls	5-8 rolls	9-12 rolls	13-16 rolls
Prewash	water	38 ± 1	3'00	3'00	3'00	3'00
Color dev.	N1 : CD	38,0 ± 0,3	3'15	3'30	3'45	4'00
Bleach	N2 : BL	38 ± 3	6'30	7'00	7'30	8'00
Fixer	N3 : FX	38 ± 3	4'20	4'20	4'20	4'20
Wash	water	24 ~ 41	3'00	3'00	3'00	3'00
Stabilizer*	N4 : STB	24 ~ 26	1'00	1'00	1'00	1'00

- The chart above shows the necessary processing condition in case 1L of working solution is used to process films in rotary processing.
- The processing times change in accordance with the amount of film to be processed in a working solution to be prepared.
- The times indicated in the chart include 10 sec of interval time while draining solutions between one process step to the next process step.
- Prewash allows to adjust film, reels and tank to the critical working temperature required for the color developer. At the same time the prewash will allow for an equal distribution of the developer on the film emulsion. The larger the film format, the more critical it is to use a water prebath.
- In case failure is found on film base color, it may be suspected that small amounts of bleach or fixer solution has contaminated into the Color developer.
- The prewash water does not need to be renewed during the whole 3 minutes. During the final wash the water should be renewed every 30 to 45 seconds to ensure good and archival proof washing of the film. It may be required to adjust the developing time if a developing method other than rotary processing is being applied.
- It may be required to adjust the developing time if a different developing method is being applied.
- In case of tray processing the films must be processed in the complete darkness until the end of Bleach processing (N2 : BL).
- ***PLEASE NOTE:** We strongly recommend to apply the stabilizer bath outside the rotary processor in a separate tray. The stabilizer does not require rotary processing or other agitation as long as the whole film is being immersed. In case stabilizer comes into contact with drum or reels, these must immediately be thoroughly cleaned with water. The stabilizer should NEVER be poured into the Lift for use in the processor!

4. Storage Condition

Process	Chemicals	Stock solution in bottles opened once	Working solution
Color dev.	N1 : CD	12 weeks	1 week
Bleach	N2 : BL	24 weeks	24 weeks
Fixer	N3 : FX	24 weeks	24 weeks
Stabilizer	N4 : STB	24 weeks	24 weeks

- **Chemistry must NEVER reach minus temperatures (in °C).**
To ensure perfect working quality the temperature must always remain between 5°C and 30°C during storage and transportation.
- Once the original bottles have been opened, please store the stock solutions in the original bottles in a dark and cool place.

5. Disposal

Please contact your local government authorities on the appropriate disposal of used or remaining chemistry. Immediately rinse completely emptied chemistry containers while mixing the last kit of chemistry so that plastic bottles can be recycled or re-used.

6. Safety precautions

Keep chemistry out of reach of children. In case chemistry comes into eye contact, please rinse with water. In case of symptoms please contact your doctor.

7. Trouble shooting

Fault	Possible Cause	Remedy
Negatives too dark	Over exposure; Developing time of first developer too long; Contamination of first developer with bleach or fixer	Check cameras and exposure; Shorten developing time by 15-30 s; Rinse equipment and reels thoroughly
Negatives too light	Under exposure; Prewash/Prewarming of the tank has been omitted; Developing time of first developer too short	Check camera and exposure; Add a prewash time of 3 to 5 min. to the program; Extend developing time by 15-30 s
Uneven color areas, streaks and stripes	Insufficient filling quantity; Prewash has been omitted; Color developer was pored in too slowly	Check filling amounts; Add a prewash time of 3 to 5 min. to the program; Fill in the color developer quickly
Color fog	Mixing vessels of the processor are not clean; Contamination of the developer by other chemicals	Use individual mixing vessels and mixing rod for each bath
Drying spots on the dry film	Tap water is too hard when preparing the stabilizer bath	Mix tap water with distilled or demineralized water in the proportion 1:2
Circular spots, especially in homogeneous areas	Formation of foam in the color developer; Water too soft or rotation speed too high	Reduce rotation speed by 25 rpm

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