



CELER-41

Fast processing for all C-41 compatible films

600ml Kit

CHECK PACKING LIST

STAGE	PARTS	LIQUID STORAGE	
		Unused	Part Used
COLOUR DEV	2	4 weeks	2-3 weeks
BLIX	2	6 months	3 months

The storage times refer to the dissolved powders. Unopened powder packs keep for years.

MIXING WORKING SOLUTIONS

Make only one solution at a time and well before processing. All the powders dissolve in cold water.

Prevent particles flying off by static electricity to fog films by opening packs carefully over a large tray or sink containing your mixing vessel. Kill the static by carefully filling packs with a little water, then pour out the sludge, finally washing with more water to make the volume needed. Take great care to label each bottle. More problems are caused by cross-contamination than any other factor.

NEVER RE-USE FOOD CONTAINERS. Glass bottles are advised.

COLOUR DEVELOPER

Dissolve the red then blue-spotted pack contents in that order in about 500ml water, then make to 600ml and mix well. Transfer to a tightly-stoppered, glass bottle. If a small developing tank is used, the developer can be stored as two or more portions, each in a separate full glass bottle. NEVER use plastics bottles. The developer is now ready for use.

BLIX

Dissolve the contents of the white powder pack and then the brown in about 500ml water, then make to 600ml with more water. It does not need to be accurately measured. Store in a tightly-stoppered glass bottle. NB This is NOT the method normally recommended! The blix is now ready for use.

GETTING READY FOR PROCESSING

Maintain all solutions and wash water at 38° Celsius. If you have never processed C-41 film before, practice a complete run through first with an empty tank and cold water. This gives a much better idea of how much wash water is needed, and when. It also pinpoints snags such as an overfilled water bath, and developing tank or bottles rolling about, which could lead to a disastrous spillage.

Washing is very important. Err on the side of caution and extend wash times or number if in doubt. Wash by repeat tank fillings. Agitate continuously for about 30 seconds, and repeat. Five fillings after the blix should be enough, with about 30 seconds agitation each time.

Preheat a large bowl/tank of water to about 40°C, and stand the bottles and loaded developing tank in it long enough to reach your chosen working temperature. As the temperature drops add more hot water to keep steady, or use a commercial tempering unit. Surplus warm water can be poured into a bucket for washings. Just before starting processing, check that you have enough wash water ready at around 32-40°C.

To start processing, fill the developing tank with clean water at the processing temperature, swirl a little and empty. Repeat until the water is no longer coloured. Experienced workers can leave out this pre-wash - it is to ensure that the tank is at the right temperature and the film moistened for even development with no air-bell problems. It also removes unwanted film additives and dyes, cleaning the developer and improving its storage life. Finally refill the tank with clean water and stand until ready to begin.

PROCESSING

Use equipment already found suitable. Development time and agitation is the same as conventional C-41, but because the Blix & Wash steps are much shorter, continuous agitation is essential. The following processing schedule is intended for conventional developing tanks - 'Paterson' and others made of plastics, stainless steel, or "Dunk & Dip"s.

Rotary systems are easier to use and normally need 25-30% less development time, but the Blix and Wash steps MUST NOT be shortened further. Follow the maker's instructions and adjust either time or temperature in the light of experience as each piece of equipment will behave differently.

STEP	Min/Sec	°C	AGITATION
EMPTY PREHEAT WATER	See advice in "Getting Ready".		
1 COLOUR DEVELOP	3 15	37.8	15sec then 5 per 30
2 BLIX	1 30	32-40	Continuous
3 WASH	3 00	32-40	Continuous
4 DRY	below 45°, dust free		

NOTES ON THE STEPS

STEP 1 - Colour development

This is the only critical step. Aim for 10 second drainage to finish on time.

The correct temperature is 37.8°C but a half degree variation either side is unlikely to be noticed except in the most critical application. Lower temperatures have many practical advantages, and the room temperature option makes this Kit of particular value to monochrome workers wishing to keep familiar times and temperatures.

STEP 2 - Blix

Agitation must be continuous. Extend the blixing time to 2 minutes after 4 full-length films have been processed per 600ml (2 per 300ml).

STEP 3 - Washing

This is another important step. Err on the safe side and wash well. Wash for at least 5 minutes with continuous water-washing systems.

STEP 4 - Drying

Where negatives are to be stored a very long time, use any C-41 stabilising bath after the final wash, before drying.

SPECIAL POINTS TO NOTE

- 1 ALWAYS be extra careful washing thermometers before dipping into the next solution, or tempering baths to stop cross contamination.
- 2 Do not use mercury thermometers. A breakage is dangerous to yourself, and the vapour will also affect films and papers. Only use a spirit or electronic thermometer.
- 3 Consistency is much more important than accurate temperature control. Stick to the same equipment and technique.
- 4 There is an inevitable quality loss if too many films are put through each batch of developer. Used as "One-Shot", 3 x 36 exp 35mm films is the limit for each 300ml developer. More films (up to eight) can be processed in 600ml - see notes overleaf on CAPACITY.

TROUBLE SHOOTING

As no stop is used, a pink stain (greenish to blue cast in the print) may form with some makes of film, particularly forced high speed types. This can be filtered out when making a print - always check print filtration for "New" films before processing anything important. Where strong staining is noted, or in the interests of keeping the blix fully active, a water wash (or conventional acid stop), can be introduced before blixing. One or two quick water rinses are normally sufficient.

ROOM TEMPERATURE PROCESSING

Modern films process well in this fast Kit with a 12 min development time at 20°C and only a 100% time increase in the blix and washing. This is a great practical advantage with the modern chromogenic films. Ilford's XP2 Super, Kodak's T400CN and Konica VX400 are the best known. All familiar techniques of development time change can be used to alter image density and exposure. The film Maker's suggested timings for C-41 are just multiplied by 4 at 20°C. If this is too dense try a lower factor, such as 3 or 3.5.

CAPACITY

Make the following time adjustments to maintain correct development for more than 1 film. One FILM UNIT is one 36 exp 35mm film in a 300ml tank, or two 36 exp 35mm (or one 120 or 220 film) in a 500/600ml tank - if in doubt for other film sizes or lengths, assume they equal one full unit.

NB All chromogenic films are now fully C-41 compatible.

FILM UNITS	DEVELOPMENT		BLIX (Min/Sec)	
	In	300ml	5/600ml	300ml
1st	3 15	3 15	1 30	1 30
2nd	3 25	3 15	1 30	1 30
3rd	3 30	3 25	2 00	1 30
4th	don't	3 30	2 00	1 30
more	don't	3 30	don't	2 00

EXPOSURE COMPENSATION

Longer development for underexposure often gives poorer grain and fog with a colour bias, whilst the orange colour mask becomes very strong. A better colour balance and grain can be obtained by dropping the processing temperature to 33°C. The Table gives some options. For gross underexposure the SPEEDI-41 process should be used.

STOPS >	+3	+2	+1	Correct	-1
TEMP °C	TIMES (Min Sec)				
Any	+120%	+75%	+30%	Correct	-30%
37.8	don't!	5 40	4 15	3 15	2 15
33	10 45	8 20	6 15	4 45	3 15

INTERFERENCES

Process only one Brand of film in each batch of developer, and to keep batches of film speeds separated. Do not process the faster speed films of different Brands in the same part-used developer.

PRINTING

There can be quite marked filtration differences between these and some commercially processed films, an unfortunate fact of life due to variable commercial replenishment rates. As an approximation for a first print, use colours matching blank film, or place a piece of blank film in the light path of the enlarger. This should be close enough to make an assessment for minor corrections to the colour.

As there are inevitable colour dye changes over a period of time, SPEEDIBREWS KITS are not warranted against any changes in colour between films.

Printing papers are based on the RA4 process. SPEEDIBREWS make kits based on the same simplified solid chemistry as this kit. These are available in a range of popular sizes, and refill part-packs.

NEGATIVE/REVERSED SLIDES

Interesting artistic effects in the complementary colours, without the orange mask of negative films are obtained with E-6 slide films. This is by far the easiest way to make colour negative/reversed slides.

- Expose slide films as recommended by the Maker.
- Develop exactly by the negative film processing schedule.
- As there is no orange mask, the films will force better. Try 1 to 3 stops underexposure, and extending development to 6 or more minutes. This will generate good colour saturation and/or grain effects as required.
- The negatives are quite contrasty and this is an advantage in astrophotography and some types of available light work.

USEFUL TIP It is vital to use a stop, and then fully wash after development, before blixing, otherwise a strong coloured mask is formed. The colour varies according to the make and type of film, which does add an extra artistic dimension if deliberately enhanced without the stop.

MONOCHROME FILMS

Ordinary black and white film gives extremely fine grain in this Kit. The results with Technical Pan 2415 made this combination in a class of its own. Unfortunately no longer available.

Expose film at its normal EI, and develop for 10 min at room temperature 20°C. USE A STOP, and follow with a fix and wash for a normal monochrome negative.

NB DO NOT ATTEMPT TO BLIX - there will be no image if you do !

The optimum time has to be found; 10 min is an average time, but up to 20 may be needed for fast film. This is an excellent way of using spent colour developer. The negatives will often have an extended tonal range which can be useful in low-light conditions.

BLACK AND WHITE PRINTS

Colour negatives can be printed on conventional B & W papers without special papers such as "Panalure" and total darkness.

Print with a Wratten 58 or 61 in the enlarger. The results will have a normal tonal range and granularity. Cyan + yellow or green dichroic filters give lower contrast.

C-22 FILMS

Examples of this obsolete film still crop up from time to time. There are no guarantees of quality because the storage conditions for out-of-date films cannot be fully known, but they are worth processing in this Kit.

- If not already exposed, use the Maker's recommended speed.
- Develop at ROOM TEMPERATURE - 20°C. Try 10 minutes for recently exposed stock and 12 for anything older.
- Double the times for the other steps, keeping it at 20°C, taking care with the relatively softer emulsion.
- If the colour bias is distorted too much, the film can at least be printed in monochrome/black & white.

DISPOSAL

A sense of proportion is needed in respecting the environment. This kit is not an industrial product and will only be used occasionally. Dispose of all parts by flushing down a sink with plenty of wash water. The ingredients are biodegradable and amount in total to less sewage load than the material you, as an individual, excrete and flush down the toilet each day ! Dispose of empty vessels responsibly.

CAUTIONS

All chemicals are toxic if abused. Read the labels.

KEEP OUT OF THE REACH OF CHILDREN

NEVER, under any circumstances eat, drink or smoke when handling chemicals and avoid contact with the eyes.

If an accident should happen, drench with water.

In the case of ingestion give plenty of milk or water.

In case of accidental eye contact or ingestion, SEEK IMMEDIATE MEDICAL ATTENTION and give this information :

DEVELOPER

Alkaline Colour Developer (CD4). pH > 10.
[HAZ CLASS-6.1/12c. UN No-2811]

BLIX

Neutral thiosulphate and an iron (III) EDTA complex. [HAZ CLASS-NR. UN No-NR]

You are strongly advised to wear rubber gloves whilst handling colour developer. No responsibility is accepted for any skin complaint or other adverse effects through use of this kit.

Sluice everything down well afterwards.

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