Film developer

Very fine grain
Medium contrast

BERGGER Ber49

Ber49 developer is a very fine grain developer that allow an optimum speed utilization with most of the films. When a film is processed in BER49, it leads to a fine structure of grainand a medium contrast.
Ber 49 is recommended with both traditionnal and modern grain films. Outstanding results are obtained with the Bergger PANCRO400.

Mixing instructions

BER49 is sold in powder that has to be dissolved in pure water. Even if the chemicals are not hazardous, it's better to prepare the stock solution wearing gloves, eye protections, and an apron.

To prepare the concentrated solution (stock solution), dissolve a small amount of the content of part C followed by part A in about three-quarters of the total solution volume (see on the box) of water heated at about 30-40 °C. Stir until the whole powder is dissolved. Then add the remaining content of the part C. Keep stirring until no more powder is in suspension. Finally add part B. Then add room temperature water to reach the final volume.

In order to obtain outstanding results it's recommended to filter the solution through a coffee filter.
The developer stock solution is now ready.

Conservation

The lifetime of the stock solution in an opaque container properly closed is about 4 months.

Use instructions

Dilution: Ber49 can be used either as a stock solution, or the stock solution can be diluted 1:1 with water in order to reach negatives with more details and better balance.

Optimal developing temperature:
Best results will be obtained developing at 24°C (75°F). However, it can be used from 20°C (68°F). It's not recommended to develop at higher temperatures than 24°C (75°F).

Film processing

As with all other developer, it is recommended to prewet the film, at least for one minute.

Then, pour the tank with the Ber49 working solution and agitate softly but continuously for 30s.

Then agitate soflty 10s every minute. Then stop the reaction with stop bath, and fix as usual.

Developing times

The following developing times are given as a starting point, to reach a contrast value of γ=0,70. These developing times can be adapted, depending on the photographer's needs. From 20° to 24°, the given developing times allows a soft grain and a wide range of grey.

Film	ISO	Dil	20°	21°	22°	24°
BERGGER Pancro400	400	Stock	14′	12′50	11′45	10′
	400	1+1	22′30	21′	19′	16′15
Ilford PanF +	50	Stock	7′	6′30	6′	5′
	50	1+1	11′15	10′30	9′30	8′15
Ilford FP4+	125	Stock	8′	7′20	6′45	5′45
	125	1 + 1	12′45	11′45	10′50	9′15
Ilford HP5+	400	stock	7′30	7′	6′25	5′25
	400	1+1	12′	11′	10′15	8′45
	800	stock	9′	8′20	7′40	6′30
Ilford Delta 100	100	stock	7′45	7′10	6′35	5′30
	100	1+1	12′	11′	10′15	8′45
Ilford Delta 400	400	stock	8′	7′20	6′45	5′45
Ilford Delta 3200	3200	stock	17′	15′45	14′30	12′15
Kodak Tri-x 400	400	1+1	19′15	17′45	16′25	14′
	800	1+1	NR	NR	NR	20′
Kodak Tmax 100	100	stock	8′	7′20	6′45	5′45
	100	1+1	13′	12′	11′	9′15
Kodak Tmax 400	400	stock	11′	10′15	9′15	8′
	400	1+1	17′30	16′15	14′45	12′30
Fujifilm Acros 100	100	1+1	12′	11′	10′15	8′45
Fomapan 100	100	1+1	13′	12′	11′	9′15
Fomapan 200	200	1+1	13′	12′	11′	9′15
Fomapan 400	400	1+1	13′	12′	11′	9′15
Rollei RPX 100	100	stock	10′	10′15	9′15	8′
	100	1+1	16′	14′45	13′40	11′30
Rollei RPX 400	400	stock	11′	10′15	9′15	8′
	400	1+1	17′30	16′15	14′45	12′30

Time / temp chart

To adapt your development time according to your preferences, you can refer to this Time / temp chart.

	Temp				
	20°	**21°**	**22°**	**23°**	**24°**
Time	4′	NR	NR	NR	NR
	4′30	4′	NR	NR	NR
	5′	4′30	4′15	4	NR
	5′30	5′	4′30	4′15	4′
	6′	5′30	5′	4′45	4′15
	6′30	6′	5′30	5′	4′45
	7′	6′30	6′	5′30	5′
	7′30	7′	6′25	5′55	5′25
	8′	7′20	6′45	6′15	5′45
	8′30	7′45	7′15	6′45	6′10
	9′	8′20	7′40	7′	6′30
	9′30	8′40	8′	7′30	6′45
	10′	9′15	8′30	7′45	7′15
	10′30	9′45	9′	8′15	7′40
	11′	10′15	9′15	8′40	8′
	11′30	10′40	9′45	9′	8′15
	12′	11′	10′15	9′20	8′45
	12′30	11′30	10′40	9′45	9′
	13′	12′	11′	10′15	9′25
	13′30	12′30	11′30	10′35	9′45
	14′	12′50	11′45	11′	10′
	14′30	13′25	12′15	11′25	10′30
	15′	13′45	12′40	11′45	10′50
	15′30	14′15	13′15	12′15	11′15
	16′	14′45	13′40	12′30	11′30
	16′30	15′15	14′	13′	11′
	17′	15′45	14′30	13′15	12′15
	17′30	16′15	14′45	13′40	12′30
	18′	16′30	15′15	14′10	13′
	18′30	17′	15′45	14′30	13′25
	19′	17′30	16′10	14′50	13′45
	19′30	18′	16′30	15′20	14′15
	20′	18′30	17′	15′45	14′30