

ILFORD FILM DEVELOPMENT CHART (@20°C)

Developer		FILM	PANF <i>Plus</i>			FP4 <i>Plus</i>			HP5 <i>Plus</i>					400DELTA			
			25	50	100	50	125	200	400	200	400	800	1600	3200	200	400	800
ID-11 General purpose fine grain developer (Powder)	STOCK		6.5	6.5	—	5	6	8	—	—	7.5	10.5	14	—	5.5	7	9.5
	1+1		8.5	8.5	—	7	8	12	—	—	13	16.5	—	—	9	10.5	16
	1+3		14	15	—	15	18	—	—	—	20	—	—	—	14.5	16.5	—
MICROPHEN Speed increasing fine grain developer (Powder)	STOCK		4.5	4.5	8	—	5.5	6.5	11	—	6.5	8	11	16	—	5.5	8
	1+1		6	6	—	—	7	9	16	—	12	15	—	—	—	11	16
	1+3		11	11	—	—	10	13	—	—	23	—	—	—	—	20	—
PERCEPTOL Extra fine grain developer (Powder)	STOCK		9	14	—	7.5	9	—	—	11	11	—	—	—	10.5	13	—
	1+1		10.5	15	—	10.5	14	—	—	—	15	—	—	—	12.5	15	—
	1+3		15	17	—	14	18	—	—	—	25	—	—	—	17	22	—
ILFOSOL S Fine grain one-shot (Liquid developer)	1+9		—	4	—	3.5	4	5	—	—	7	8.5	14	—	4.5	7	10.5
	1+14		—	6	—	5	6	7.5	—	—	9.5	14	—	—	7.5	11.5	—
ILFOTEC HC High quality, fine grain (Liquid developer)	1+15		—	—	—	—	3	4	7	—	3.5	5	7.5	11	—	4	7
	1+31		—	4	—	4.5	6	8.5	—	—	6.5	9.5	14	—	6	7	9.5

The times listed are meant as a guide to provide negatives of average contrast. Further refinement may be required to achieve desired results.

All development times are for 20°C with intermittent agitation. 4 times during the first 10 seconds and again every minute for 10 seconds (4 inversions).

A 30 second stop bath using **ILFORD IN-1** is recommended after development. Alternatively a water rinse can be used if a stop bath is not available.

Fix in **ILFORD HYPAM** or **ILFOSPEED** Fixer for 3 to 5 minutes at 20°C. If a hardening fix is used fix for a minimum of 5 minutes. A hardening fix is not recommended unless processing in a roller transport machine or at a temperature of 30°C or higher.

NON-ILFORD DEVELOPERS

Kodak HC-110	A	—	—	—	—	3	4	—	—	2.5	3.75	5.5	9.5	—	4	7
	B	—	4	—	4	5	8	—	—	5	7.5	11	—	6	7	9.5
Kodak D76	STOCK	6.5	6.5	—	5	5.5	7	—	—	7.5	9.5	12.5	—	5.5	7	9.5
	1+1	10.5	10.5	—	7.5	8.5	11	—	—	11	13	—	—	9	10.5	16
	1+3	15.5	15.5	—	12	14	18	—	—	22	—	—	—	14.5	16.5	—
Kodak T-Max	1+4	—	4	—	—	4.5	6	8	—	6.5	8	9.5	11.5	5.5	7	9
Kodak T-Max RS	STOCK	—	4	—	4	7.5	—	—	—	6.5	7.5	10	—	—	—	—
Kodak Microdol-x	STOCK	12	15	—	7.5	10.5	—	—	—	—	—	—	—	9.5	13	—
Tetenal Ultrafin	1+10	—	4	—	—	4	6	11	—	7.5	10	—	—	7.5	9.5	—
	1+20	—	8	—	—	7.5	12	—	—	16	—	—	—	—	11.5	—
Tetenal Ultrafin Plus	1+4	—	5	—	—	5.5	6	—	—	—	—	—	—	6	7	9.5
Acufine Acufine	STOCK	—	3.5	—	—	3	4	10	—	4.5	6.5	9.5	—	—	4.5	6
Agfa Rodinal	1+25	—	6	—	5	6	9	—	—	6	8	—	—	6	7	10.5
	1+50	—	11	—	6	8.5	13	—	—	—	—	—	—	14.5	16.5	—
Agfa Refinal	STOCK	—	5.5	—	—	4	6	11	—	6	8.5	—	—	—	4.5	7
Paterson Acutol	1+10	—	10.5	—	5	5.5	8	—	—	—	—	—	—	6.5	8	10.5

WASHING

Where a non-hardening fix, such as HYPAM has been used, wash the film in for 5-10 minutes in running water at a temperature within 5°C of the processing temperature. If a hardening fix was used a wash time of 15-20 minutes is required.

A final rinse in water to which a few drops of **ILFORD ILFOTOL** wetting agent has been added will aid in rapid and uniform drying.

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