












Processing

Kodak black-and-white film

Small Tank Processing, Intermittent Agitation for Tanks That Can Be Inverted							
ROLL FILMS							
KODAK Film	Film Code	Development Time (Minutes)				Comments	Reference Publication
		20°C (68°F)			24°C (75°F)		
		KODAK PROFESSIONAL XTOL Developer	KODAK PROFESSIONAL Developer D-76	KODAK PROFESSIONAL HC-110 Developer (Dilution B)	KODAK PROFESSIONAL T-MAX Developer (1:4)		
KODAK PROFESSIONAL T-MAX 100	100TMX	7 1/2	6 1/2	6	6 1/4		F-4016
	New						
T-MAX 100 Professional	TMX	6 3/4	9	7	6 1/2	Also T-MAX Developer (1:7) for 10 minutes or (1:9) for 14 minutes at 24°C (75°F)	F-32
							
KODAK PROFESSIONAL T-MAX 400	400TMY	6 1/2	8	6	6	Packaging change only. No change to processing time.	F-4016
	New						
T-MAX 400 Professional	TMY	6 1/2	8	6	6	Also T-MAX Developer (1:7) for 10 minutes or (1:9) for 15 minutes at 24°C (75°F)	F-32
							
KODAK PROFESSIONAL T-MAX P3200	P3200TMZ	EI 400	9 1/2	10 1/2	7 1/2	6 1/2	F-4016
EI 800		10 1/2	11 1/2	8 1/2	7 1/2		
EI 1600		11 1/2	12 1/2	9 1/4	8		
EI 3200		13 1/2	14	10 1/2	9 1/2		
EI 6400		15 1/4	15 1/2	12	11		
EI 12,500		17 1/4	—	—	12		
EI 25,000		19	—	—	13 1/2		
		New					
T-MAX P3200 Professional	TMZ	EI 400	7 1/2	10 1/2	7 1/2	6	Also T-MAX Developer (1:7) for 12 1/2 minutes or (1:9) for 15 minutes at 24°C (75°F)
EI 800		8 1/4	11	8	6 1/2		
EI 1600		9 1/4	11 1/2	9	7		
EI 3200		11	15	11 1/2	9 1/2		
EI 6400		12 1/2	17 1/2	14	11		
EI 12,500		15 1/4	—	—	12		
EI 25,000		18 1/2	—	—	14		
							
KODAK PROFESSIONAL PLUS-X 125	125PX	(135) 5 1/2 (120/220) 6	5 1/2	3 1/2	4 1/4	F-4018	
	New						
PLUS-X Pan	PX	5 1/4	5 1/2	5	5	Also Developer D-76 (1:1) for 7 minutes at 20°C (68°F)	F-8
							
PLUS-X Pan Professional	PXP	5 1/2	5 1/2	5	5	Also Developer D-76 (1:1) for 7 minutes at 20°C (68°F)	
							
KODAK PROFESSIONAL TRI-X 320	320TXP	7 3/4	9	4 3/4	5 1/4	Also T-MAX Developer for 7 1/4 minutes at 20°C (68°F)	F-4017
	New						
TRI-X Pan Professional	TXP	6 1/4	8	5 1/2	6 1/2	Also KODAK PROFESSIONAL Developer DK-50 (1:1) for 8 minutes at 20°C (68°F)	F-9
							
KODAK PROFESSIONAL TRI-X 400	400TX	7	6 3/4	3 3/4	4 3/4	Also Developer D-76 (1:1) for 9 3/4 minutes at 20°C (68°F)	F-4017
	New						
TRI-X Pan	TX	(135) 6 3/4 (120) 6 1/4	8	7 1/2	5 1/2	Also Developer DK-50 (1:1) for 6 minutes at 20°C (68°F)	F-9
							
VERICHROME Pan		6	7	5	4	Also Developer D-76 (1:1) for 9 minutes at 20°C (68°F)	F-7
							
SPECIALTY FILMS							
KODAK Film		Development Time (Minutes)					Reference Publication
		20°C (68°F)					
		KODAK PROFESSIONAL Developer D-76 for CI 0.70	KODAK PROFESSIONAL HC-110 Developer (dil B) for CI 0.80	KODAK PROFESSIONAL Developer D-19 for CI 1.65	KODAK PROFESSIONAL TECHNIDOL Liquid Developer (EI 25)	KODAK PROFESSIONAL XTOL Developer CI 0.65	
KODAK PROFESSIONAL High-Speed Infrared	HIE	8 1/2	5	6	—	6 3/4	F-13
							
KODAK PROFESSIONAL Technical Pan (135)	TP	—	—	—	9	—	P-255
							

Tray Processing							
SHEET FILMS							
KODAK Film	Film Code	Development Time (Minutes)				Comments	Reference Publication
		20°C (68°F)		24°C (75°F)			
		KODAK PROFESSIONAL XTOL Developer	KODAK PROFESSIONAL Developer D-76	KODAK PROFESSIONAL HC-110 Developer (Dilution B)	KODAK PROFESSIONAL T-MAX RS Developer and Replenisher (1:4)		
KODAK PROFESSIONAL T-MAX 100 	100TMX	6 3/4	5 3/4	5 1/2	5 3/4		F-4016
New							
T-MAX 100 Professional 	TMX	7 1/4	7	7 1/2	8	—	F-32
KODAK PROFESSIONAL T-MAX 400 	400TMY	7 1/4	7	7 1/2	6		F-4016
New							
T-MAX 400 Professional 	TMY	7 1/4	7	7 1/2	6	—	F-32
KODAK PROFESSIONAL TRI-X 320 	320TXP	6	6	3 1/4	NR	Also Developer DK-50 (1:1) for 5 minutes at 20°C (68°F)	F-4017
New							
TRI-X Pan Professional 	TXT	6 1/2	5 1/2	5 1/2	NR	Also Developer DK-50 (1:1) for 5 minutes at 20°C (68°F)	F-9
PLUS-X Pan Professional 	PXT	6 1/4	6	5	5	Also Developer DK-50 (1:1) for 4 1/2 minutes and Developer D-76 (1:1) for 7 minutes at 20°C (68°F)	F-8
EKTAPAN 	EKP	7 1/4	10	6	3	—	F-10
KODAK PROFESSIONAL Technical Pan (sheets) 	TP	—	—	—	—	TECHNIDOL Liquid Developer (EI 25) for 8 minutes at 20°C (68°F)	P-255

Final Steps in Processing Black-and-White Film			
Step/Solution	Time (min:sec)	Temperature	Comments
Rinse/stop bath	0:30	18 to 24° C (65 to 75° F)	Agitate continuously. Rinse with a stop bath such as: - KODAK PROFESSIONAL Stop Bath (1:63) - KODAK PROFESSIONAL EKTAFLO Stop Bath (1:31)
Fix	2:00 to 4:00* with a liquid-concentrate fixer -OR- 5:00 to 10:00* with a powder fixer		Agitate continuously for the first 30 seconds and at 30-second intervals after that with a hardening fixer such as: - KODAK PROFESSIONAL Rapid Fixer (liquid) - KODAK PROFESSIONAL KODAFIX Solution (liquid) - KODAK PROFESSIONAL POLYMAX Fixer (liquid) - KODAK PROFESSIONAL EKTAFLO Fixer (powder) Fix for twice as long as it takes the film to clear (lose its milky appearance). See instructions for the specific fixer. IMPORTANT: With KODAK PROFESSIONAL T-MAX Films, fixer will be exhausted more rapidly than with other films. If negatives show a magenta (pink) stain after fixing, fixer may be near exhaustion, or fixing time is too short. If the stain is pronounced and irregular, refix the film in fresh fixer.
Rinse	0:30		Rinse the film in the tank under running water.
Wash aid	1:00 to 2:00		Treat with KODAK PROFESSIONAL Hypo Clearing Agent. Agitate continuously for the first 30 seconds and then at 30-second intervals.
Wash	5:00		Run the wash water at least fast enough to provide a complete change of water in the container in 5 minutes. For rapid washing in a small tank, fill the tank to overflowing with fresh water and then dump it all out. Repeat this cycle 10 times.
Final rinse/wetting agent	0:30		To minimize drying marks, treat the film with KODAK PROFESSIONAL PHOTO-FLO Solution after washing. Provide gentle agitation for 5 seconds of the total time.
Dry	—		Hang the film to dry in a dust-free place. You may wipe the surface carefully with a soft viscose sponge to remove excess liquid. Store dry negatives in sleeves or envelopes away from dust and extreme temperature and humidity.
* Times are approximate. Refer to the film or developer instructions.			

These are starting-point recommendations for processing KODAK PROFESSIONAL Black-and-White Films with KODAK PROFESSIONAL Chemicals. For best results, you should make tests to determine the best development time for your application.

NEW packaging above identifies the most current versions of our Black-and-White family of films. These new films require modified developing times to achieve the same great look you've always counted on.

NOTE: Development times shorter than 5 minutes may produce unsatisfactory uniformity.

Kodak Professional
www.kodak.com/go/bwFilms **or**
www.kodak.com/go/professional