



# 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)					
		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
<b>New</b>							
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
<b>New</b>							
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 	EI 400 EI 800 EI 1600 EI 3200 EI 6400 EI 12,500 EI 25,000	P3200TMZ	9 1/2 10 1/2 11 1/2 11 1/2 13 1/2 15 1/4 17 1/4 19	10 1/2 11 1/2 12 1/2 14 15 1/2 — — —	7 1/2 8 1/2 9 1/4 10 1/2 12 — — 13 1/2	6 1/2 7 1/2 8 9 1/2 11 12 13 1/2	F-4016
<b>New</b>							
T-MAX P3200 Professional 	EI 400 EI 800 EI 1600 EI 3200 EI 6400 EI 12,500 EI 25,000	TMZ	7 1/2 8 1/4 9 1/4 11 12 1/2 15 1/4 18 1/2	10 1/2 11 11 1/2 15 17 1/2 — —	7 1/2 8 9 11 1/2 14 — —	6 6 1/2 7 9 1/2 11 12 14	F-32
KODAK PROFESSIONAL PLUS-X 125 	125PX	(135) 5 1/2 (120/220) 6	5 1/2	3 1/2	4 1/4		F-4018
<b>New</b>							
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)	F-8
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
<b>New</b>							
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
<b>New</b>							
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	Film Code	Development Time (Minutes)				Comments	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 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)					
		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
<b>New</b>							
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
<b>New</b>							
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
<b>New</b>							
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
<b>Rinse/stop bath</b>	0:30		Agitate continuously.  Rinse with a stop bath such as: - KODAK PROFESSIONAL Stop Bath (1:63) - KODAK PROFESSIONAL EKTAFLO Stop Bath (1:31)
<b>Fix</b>	2:00 to 4:00* with a liquid-concentrate fixer  -OR- 5:00 to 10:00* with a powder fixer	18 to 24° C (65 to 75° F)	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.  <b>IMPORTANT:</b> 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.
<b>Rinse</b>	0:30		Rinse the film in the tank under running water.
<b>Wash aid</b>	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.
<b>Wash</b>	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.
<b>Final rinse/wetting agent</b>	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.
<b>Dry</b>	—		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](http://www.kodak.com/go/bwFilms) or [www.kodak.com/go/professional](http://www.kodak.com/go/professional)

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