

TECHNICAL INFORMATION

ORWO Instruction no. 2182

ORWO black & white positive print films

ORWO black & white sound recording negative film

Application: ORWO instruction no. 2182 is the base for developing of ORWO black & white positive motion picture film.

Processing:

no.	process	bath	time (min)	temperature (°C)
1	Development	ORWO 27 or Kodak D 97	4 ... 8	21 ± 1
2	Spray-washing	-	0,5 ... 1	20 ... 24
3	Fixing	Calbe A 300 * or RF 90 *	4 ... 6	20 ... 24
4	Spray-washing	-	6 ... 8	20 ... 24
5	Wetting	F905 * (1 + 200)	1 ... 2	20 ... 24
6	Drying			max. 40
1 - 3		Dark interval of processing		

Comments: Depending to the processing equipment, deviations of the time and temperature are practicable, if a comparable processing quality is guaranteed.

The use of lower temperatures of spray-washing is possible if the spray-washing time is extended (i.e. 30...40 % at 12...15°C).

The following replenishment rates can be used as guideline. They are to be adjusted accordingly to the prevailing machine conditions.

process	bath	replenishing solution	quantity in ml per meter of 35mm film
Developer	ORWO 27 R		20
Fixing	Calbe A 300 *		10

Formulae:

Developer ORWO 27 (corresponds to Kodak D 97)

Water	750,0 ml
Pentasodiumtriphosphate *	2,0 g
Metol *	0,5 g
Sodium sulphite	40,0 g
Hydroquinone *	3,0 g
Sodium carbonate	20,0 g
Potassium bromide	2,0 g
...fill up water to	1,0 litre
pH - value	10,2 ± 0,1



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Replenisher ORWO 27 R

Water	750,0 ml
Pentasodiumtriphosphate *	2,0 g
Metol *	0,7 g
Sodium sulphite	50,0 g
Hydroquinone *	5,0 g
Sodium carbonate	30,0 g
Sodium hydroxide	0,5 g
...fill up water to	1,0 litre
pH-value	10,2 ± 0,1

Fixing bath Calbe A 300 *

Water	750,0 ml
Sodium 5 thiosulphate hydrate	200,0 g
Potassium bisulphite ¹⁾	20,0 g
...fill up water to	1,0 litre
pH-value	5,2 ± 0,2

¹⁾ 20 g potassium bisulphite can be replaced by 40 ml sodium hydrogen sulphite (37 %).

* Explanations:

Pentasodiumtriphosphate	Anticalcium agent based on polyphosphate
Hydroquinone	Developing agent
Metol	Developing agent (monomethyle-p-aminophenol sulphate)
F 905	Calbe Wetting agent
A 300	Calbe Rapid fixing based on ammonium thiosulphate
RF 90	Calbe Rapid fixing based on ammonium thiosulphate



We reserve the right to change the ORWO-Instruction no. 2182 to improve the characteristics of film and perfect the safety of processing bathes.

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