

TECHNICAL INFORMATION

ORWO Instruction no. 4185

ORWO black & white negative camera film UN 54

Application:

Reversal processing of ORWO black & white reversal films like ORWO UN 54.

Processing:

no.	process	bath	time (min)	temperature (°C)
1	First development	ORWO 829	4	24 ± ½
2	Spray-washing	-	2	20 ... 24
3	Bleaching	ORWO 833	1 ... 2	23 ... 25
4	Spray-washing	-	1	20 ... 24
5	Clearing	ORWO 835	1	23 ... 35
6	Spray-washing	-	1	20 ... 24
7	Second exposure	approx. 8.000 lxs		
8	Second development	ORWO 842	2	24 ± ½
9	Spray-washing	-	0,5	20 ... 24
10	Fixing	Calbe A 300 * or RF 90 *	1	23 ... 25
11	Spray-washing	-	3	20 ... 24
12	Wetting	F905 * (1+200)	0,5	23 ... 25
13	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.

Bath	Replenisher	Replenishing rate ml / m of 35mm film
First developer	ORWO 829 R	30
Bleach	ORWO 833 R	20
Clearing bath	ORWO 835 R	20
Second developer	ORWO 842 R	20
Fixing	Calbe A 300 *	10



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Formulae:

First Developer ORWO 829

Solution 1:

Water (35°C)	750,0 ml
Pentasodiumtriphosphate *	2,0 g
Sodium sulphite	25,0 g
Phenidone *	0,2 g
Hydroquinone *	10,0 g
Sodium carbonate	20,0 g
Potassium bromide	6,0 g
Potassium thiocyanate	6,0 g

Solution 2

Water (20°C)	125,0 ml
Pentasodiumtriphosphate *	2,0 g
Sodium hydroxide	5,0 g
After cooling down solution 1 pour solution 2 into it and ...fill up water to	1 litre
pH - value	11,2 ± 0,1

Replenisher ORWO 829 R

Solution 1

Water (35°C)	750,0 ml
Pentasodiumtriphosphate *	2,0 g
Sodium sulphite	45,0 g
Phenidone *	0,2 g
Hydroquinone *	15,0 g
Sodium carbonate	20,0 g
Potassium bromide	4,5 g
Potassium thiocyanate	7,0 g

Solution 2

Water (20°C)	125,0 ml
Sodium hydroxide	7,0 g
After cooling down solution 1 pour solution 2 into it and ...fill up water to	1 litre
pH - value	11,2 ± 0,1

Bleaching bath ORWO 833

Water	750,0 ml
Potassium dichromate	10,0 g
Sulphuric acid, conc. (caution)	15,0 ml
...fill up water to	1 litre
pH - value	<1,0



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Bleach Replenisher ORWO 833 R

Water	750,0 ml
Potassium dichromate	25,0 g
Sulphuric acid, conc. (caution)	30,0 ml
...fill up water to	1 litre
pH - value	<1,0

Clearing bath ORWO 835

Water	750,0 ml
Pentasodiumtriphosphate *	1,0 g
Sodium sulphite	90,0 g
...fill up water to	1 litre
pH - value	9,2 ± 0,2

Clearing Replenisher ORWO 835 R

Water	750,0 ml
Pentasodiumtriphosphate *	1,0 g
Sodium sulphite	140,0 g
...fill up water to	1 litre
pH - value	9,3 ± 0,2

Second Developer ORWO 842

Like first developer ORWO 829, but without potassium thiocyanate !!

Replenisher ORWO 842 R (second developing)

Solution 1	
Water (35°C)	750,0 ml
Pentasodiumtriphosphate *	2,0 g
Sodium sulphite	55,0 g
Phenidone *	0,25 g
Hydroquinone *	20,0 g
Sodium carbonate	20,0 g
Potassium bromide	5,0 g

Solution 2	
Water (20°C)	125,0 ml
Sodium hydroxide	10,0 g
After cooling down solution 1 pour solution 2 into it and	
...fill up water to	1 litre
pH - value	11,2 ± 0,1



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Fixing bath Calbe A 300 *

Water	750,0 ml
Sodium thiosulphate 5 hydrate	200,0 g
Potassium bisulphite	20,0 g ¹⁾
...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. 4185 to improve the characteristics of film and perfect the safety of processing bathes.



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