

1. Introduction

This information contains specifications describing processing of Black and White Negative and Positive Films in continuous machines with liquid and solid chemical kits.

Kit chemicals make it easier to prepare the processing solutions. Mixing is simpler. The mixing time is lower. You produce most constant quality and reduce faults and your production costs. Calbe Chemie GmbH guarantee that the kits are meeting our required Quality Control Specifications.

2. Chemicals and general information for the handling

2.1 Assortment

Negative-Process

Ref. Number	Product	Mixing size for (l)	Con-tents (l)	Description	Weigh per unit (kg)
19716	A 17 liquid B/W Developer	1 x 60	20	for tank solution (working solution), liquid, 1 part	22,8
19717	A 17 R liquid B/W Developer Replenisher	1 x 60	20	for replenisher, liquid, 1 part	23,3
19719	A 17 R liquid B/W Developer Replenisher	1 x 180	60	for replenisher, liquid, 1 part	69,9
19713	A 17/A 27 RCY ADDITIV liquid		20	antioxidant for developer, liquid (basis: sodium sulphite)	23,1
19723	A 17/A 27 RCY ADDITIV liquid		120	antioxidant for developer, liquid (basis: sodium sulphite)	138,6
19735	A 600 RCY Teil A		200	fixer part (basis ammonium thiosulphate)	273,5
19737	A 600 RCY Teil A		20	fixer part (basis ammonium thiosulphate)	27,4
19736	A 600 RCY Teil B		200	fixer additive (oxidation agent)	229,1
19738	A 600 RCY Teil B		15	fixer additive (oxidation agent)	17,2

Positive-Process

Ref. Number	Product	Mixing size for (l)	Con-tents (l)	Description	Weigh per unit (kg)
19726	A 27 liquid B/W Developer	1 x 60	20	for tank solution (working solution), liquid, 1 part	24,3
19727	A 27 R liquid B/W Developer Replenisher	1 x 60	20	for replenisher, liquid, 1 part	25,0
19729	A 27 R liquid B/W Developer Replenisher	1 x 180	60	for replenisher, liquid, 1 part	70,5
19713	A 17/A 27 RCY ADDITIV liquid		20	oxidation agent for developer, liquid (basis: sodium sulphite)	23,1
19723	A 17/A 27 RCY ADDITIV liquid		120	antioxidant for developer, liquid (basis: sodium sulphite)	138,6
19735	A 600 RCY Teil A		200	fixier part (basis ammonium thiosulphate)	273,5
19737	A 600 RCY Teil A		20	fixier part (basis ammonium thiosulphate)	27,4
19736	A 600 RCY Teil B		200	fixer additive (oxidation agent)	229,1
19738	A 600 RCY Teil B		15	fixer additive (oxidation agent)	17,2

2.2 General safe handling

All photographic processing solution can exert harmful effects when brought into contact with human tissue to a greater or lesser extent depending on the nature of the solution and its concentration. All user of such solution should exercise the greatest care to avoid the chemicals contacting the skin, eyes or other parts of body.

Always wear solution resistant gloves and effective eye protection. In case of accidental contact with processing solutions wash the affected part with plenty of clean cold running water. Consult a medical doctor. Some photographic solutions produce irritating vapours therefore thorough ventilation is essential. Do not inhale air processing solution.

Always read the hazard information on the packs of solution concentrate or the material safety data sheets (MSDS) before attempting to handle the solution.

2.3 Storage of chemicals and ready to use solutions

Store the chemicals in cool, dry conditions in well sealed containers.

Protect the kits from heat, direct sunlight and frost.

Store ready to use solution at normal room temperature of 21 to 24°C. Storage temperature higher than 25°C will decrease the storage life of the solutions. Storage below 15°C can cause some solution constituents to precipitate.

For the storage life of the solution see the following table.

	Concentrate	Ready to use solution	
		Open tank	Floating cover
Developer	6 months	1 week	2 weeks
Fixer	12 months	4 weeks	8 weeks

3. Processing Specification

3.1 Negative

Process step	Temperature °C	Time min	Replenishment per 30,5 m of 35 mm Film	Recirculation (R); Agitation (A) Filtration (F)
Developer	21,0 ± 1,0	4 ... 8 *)	1200 ml	R, A, F
Wash **)	20 ... 24	3		
Fixer	20 ... 24	at least 7	900 ml	R
Wash	20 ... 24	at least 8		

*) Will vary with film sort and conditions of processing machines

**) or Stop bath

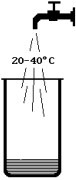
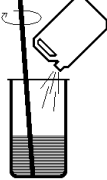
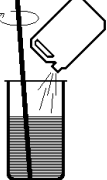
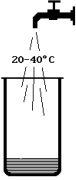
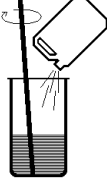
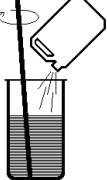
3.2 Positive

Process step	Temperature °C	Time min	Replenishment per 30,5 m of 35 mm Film	Recirculation (R); Agitation (A) Filtration (F)
Developer	21,0 ± 1,0	4 ... 8 *)	650 ml	U, F & T
Wash **)	20 ... 24	3		
Fixer	20 ... 24	at least 6	600 ml	U
Wash	20 ... 24	at least 8		

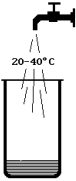
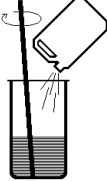
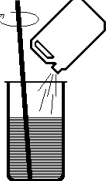
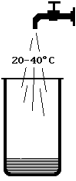
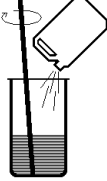
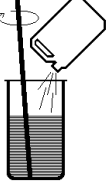
*) Will vary with film sort and conditions of processing machines

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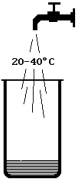
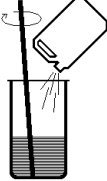
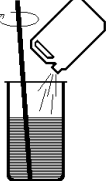
3.3 Mix instructions
3.3.1 Negative Developers

Bath	Water	A 17 liquid	A 17/A 27 ADDITIV liquid
<p><u>Tank Solution</u> (Working Solution)</p> <p>60 l</p>	 <p>20 l</p>	 <p>20 l</p>	 <p>20 l</p>
	Water	A 17 R liquid	A 17/A 27 ADDITIV liquid
<p><u>Replenisher</u></p> <p>60 l</p> <p>180 l</p>	 <p>20 l</p> <p>60 l</p>	 <p>20 l</p> <p>60 l</p>	 <p>20 l</p> <p>60 l</p>

3.3.2 Positive developer

Bath	Water	A 27 liquid	A 17/A 27 ADDITIV liquid
<p><u>Tank Solution</u> <u>(Working Solution)</u></p> <p>60 l</p>	 <p>30 l</p>	 <p>20 l</p>	 <p>10 l</p>
	Water	A 27 R liquid	A 17/A 27 ADDITIV liquidf
<p><u>Replenisher</u></p> <p>60 l</p> <p>180 l</p>	 <p>20 l</p> <p>60 l</p>	 <p>20 l</p> <p>60 l</p>	 <p>20 l</p> <p>60 l</p>

3.3.3 Fixer

Bath	Water	A 600 RCY part A	A 600 RCY part B
<p><u>Tank Solution</u> <u>(Working Solution) =</u> <u>Replenisher</u></p> <p>90</p>	 <p>55 l</p>	 <p>20 l</p>	 <p>15 l</p>