FOMAPAN R

BLACK-AND-WHITE REVERSAL FILM

In General

FOMAPAN R is a panchromatic sensitized black-and-white reversal film intended for taking black-and-white transparencies and/or making movies. From the shape of the characteristic curve it is evident that the film is characterized by very good differentiation of fine gray shades both in areas of highlights and shadows. In the areas of normal exposures, the linear part of the characteristic curve shows the gradation of 1,1. The spectral sensitisation of FOMAPAN R is designed for to true transfer colour tones into the gray scale when exposed in daylight, and simultaneously to make full use of the film speed when exposed in artificial light.

Due to a very efficient antihalo layer, situated between the base and emulsion layers, the film features very good resolving power and high contour sharpness.The antihalo layer will decolorize during processing.

Speed

The film has a nominal speed rating of ISO 100/21° when processed in R-100 Process. Other processes can cause deviations from the nominal film speed. It is, therefore, recommended that the real film speed be checked by trial tests in such cases.

Processing in R-100 Process

	Process steps	*Time (minutes)*	*Temperature (° C)*
1	Firs development FOMADON LQR (1+10)	9 – 10*	20 ± 0,5
2	Washing (running water)	10	20 ± 3
3	Bleaching (FB–2)	5	20 ± 0,5
4	Washing (running water)	5	20 ± 3
5	Cleaning bath	3	
6	Washing (running water)	5	20 ± 3
7	Second exposure (or reversal bath)	2x 30 sec	
8	Washing (running water – after the reversal bath only)	10	20 ± 3
9	Second development FOMADON LQR (1+10)	9	20 ± 0,5
10	Washing (running water)	10	20 ± 3
11	Fixing (FU–5)	9	20 ± 3
12	Washing (running water)	30	20 ± 3
	Total processing time (excluding drying)	100–102 (110–112)**	

Note:

**development time depends on the alternatives of processing procedure used*

*** information in parentheses is valid in case of reversal bath application*

Safelighting

FOMAPAN R is processed at total darkness or at infrared illumination up to operation No. 6 inclusive (washing before re-exposure).

Storage

Unexposed films should be stored in the original packaging in a dry and cool place (at temperatures ranging from 5 to 21 °C and relative humidities ranging from 40 to 50 %), out of reach of harmful vapours, gases and ionizing radiation. Films stored in a refrigerator and a freezer should be adjusted to room temperature before using for about 2 and 6 hours respectively.

Exposed films shoud be processes as soon as possible. In cases this condition cannot be kept, the films should be stored at lower temperatures (4 bis 18 °C) and relative humidities less than 60 %, out of reach of harmul vapours, gases and ionizing radiation.

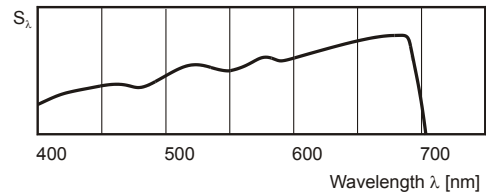
Processed films should usually be stored at temperatures up to 21 °C and relative humidities ranging 40 bis 60 %. For a long-term storage (e.g. in archives), special regulations of coresponding institutions should be adhered to.

Packaging

FOMAPAN R is available as:

- one-edge perforated 16 mm film
- 2 x 8 mm film (standard)
- 2x Super 8 mm film (DS 8)
- both-edge perforated 35 mm film in 135-36 cartridge for 36 slides of 24x36 mm or as bulk length goods in customary lengts.

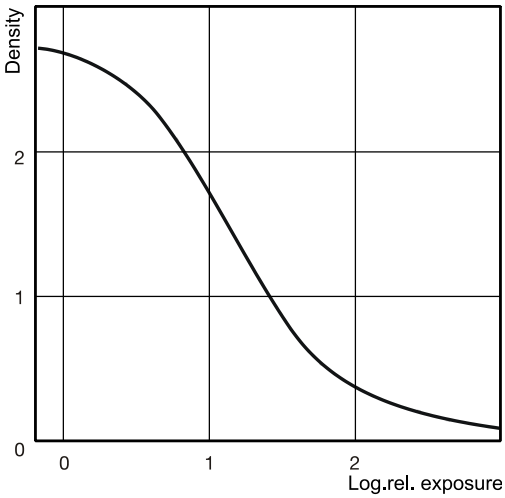
Relative spectral sensitivity



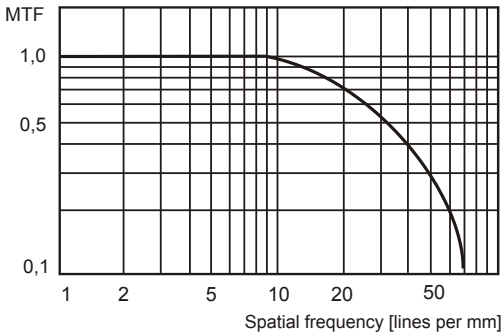
Characteristic Curves

Exposure: Daylight (5500 K), 1/20 s

Process R-100



Modulation transfer function



Resolving power

115 lines per mm

Granularity

RMS = 13.0. Measured at γ = 1.1. Process R-100.

Base

FOMAPAN R is usually produced on a cellulose triacetate safety film base 0.125 mm thick or on a polyester film base of the same thickness when higher demands concerning mechanical resistance and dimensional stability are made on the film.

PROCESS R-100

FOR PROCESSING OF FOMAPAN R BLACK-AND-WHITE REVERSAL FILMS

In general

The Process R-100 is an analogy to classic processes for black-and white reversal materials. It is intended both for the manual processing in dish/tank and for the machine processing in developing machines. Both in the first and the second development the commonly available developer Fomadon LQR is used and recommended for optimum results.

If the developing machine used does not allow to provide the second exposure, a reversal bath formulated below should be applied (similar to E-6 Process).

R-100 Process scheme

	Process steps	*Time (minutes)*	*Temperature (^oC)*
1	First development FOMADON LQR (1+10)	9 – 10*	20 ± 0,5
2	Washing (running water)	10	20 ± 3
3	Bleaching (FB–2)	5	20 ± 0,5
4	Washing (running water)	5	20 ± 3
5	Cleaning bath	3	
6	Washing (running water)	5	20 ± 3
7	Second exposure (or reversal bath)	2x 30 sec***	
8	Washing (running water – after the reversal bath only)	10	20 ± 3
9	Second development FOMADON LQR (1+10)	9	20 ± 0,5
10	Washing (running water)	10	20 ± 3
11	Fixing (FU–5)	9	20 ± 3
12	Washing (running water)	30	20 ± 3
	Total processing time (excluding drying)	100–102 (110–112) **	

Note:

**/ developing time depends on the way of processing used*

***/ information in parentheses is valid in case of reversal bath application*

****/ re-exposure to be done in the developing tank using a 100 W bulb in a distance of 1 m in water and with the film moving (turning the spiral with the film) – 30 sec from both sides*

safelishting (step 1 – step 6) – total darkness or infrared light

Composition of working solutions

Reversal bath		*Bleaching FB-2*		
Water	900 ml	1	Potassium dichromate	5,0 g
Calgon (M19)	1,5 g	2	Sulfuric acid conc.	10 ml
or Chelaton III	5,0 g	3	Water to make	1000 ml
Tin dichloride	1,65 g			
p-aminophenol hydrochloride	0,66 g			
Sodium hydroxide	4,8 g			
Essigsäure 60%	11,0 ml			
Fixer FU-5		*Cleaning bath FB-3*		
Natrium thiosulfate 5 H_2O	250,0 g	1	Potassium disulfite	50,0 g
Potassium disulfite	25,0 g	2	Water to make	1000 ml
Water to make	1000 ml			
Note: To prepare processing solutions, distilled or (if not available) at least boiled water is recommended.				

The product has been produced and marketed in conformity with a quality system according to the international standard EN ISO 9001.

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