

PHOTOGRAPHIC EMULSION

In general

There are technically given limits for the use of photopapers. To extend these limits and so to support the creative power both amateur photographers and professionals, this universal emulsion was developed. By its correctness, the results limited only by users' own imagination, can be achieved. The photographic emulsion enables creating works of great value both in artistic and photographic respect. Of some importance is the fact that standard results can be achieved provided the correct emulsion handling procedure is applied.

The photographic emulsion is made by using the most modern production technology. The emulsion features medium contrast and extremely high covering power which enable gaining a wide scale of halftones even by a relative high yield of 3 to 6 sq. m per 1 kg of emulsion. For the majority of common applications (particularly on smooth surfaces), only one layer of emulsion is sufficient to be spread. An advantage of this highspeed emulsion are short exposures which make large size enlarging possible. With the majority of developers, this emulsion gives a neutral to mildly warm image tone.

The emulsion can be spread on the most different bases, as e. g. wood, textile, glass, china, ceramics, metals, leather, stone, concrete, plaster etc. What is, however, important is the photochemical inactivity of the base. This condition not being met, the base should be treated with a suitable waterproof layer (e.g. epoxide varnish, etc.). Another important requirement is a good wetting power of the base surface. To ensure good coherence of the emulsion to the base, the non-wettable surfaces should be treated with a suitable preparation layer before spreading the emulsion.

Example of a preparation solution composition:

Gelatine (1 % solution)	100,0 ml
Chrome alum (10 % solution)	0,5 ml
Ethanol 96 %	4,0 ml

With this solution, only thoroughly clean and dry objects should be treated.

Packaging

The photographic emulsion is supplied in light-tight PE-bottles. The commercial packaging consists of a cardboard box containing:

Photographic Emulsion	1 kg	(Open in darkroom only!)
HARD Hardener	15 ml	

Yield

1 kg of emulsion is sufficient to prepare an area of 3 to 6 sq. m according to base type, surface quality and thickness of the layer spread.

Processing

Due to a high silver content and a relatively thick layer when spreading the emulsion manually, energetic developers are recommended, e.g. Fomatol LQN and Fomatol P from the FOMA product line. To effectively stop the development, Fomacitro citric acid-based stop bath is suitable. For fixing, Fomafix fixer is recommended. Corresponding processing chemicals of other manufacturers can be used as well.

Warning: It is important that a perfect fixing and an adequately long washing be cared about (at best in running water), otherwise the resulting photographic image would not be long-term stable.

FOMA HARD Hardener

This special hardener is supplied together with the emulsion. The hardener ensures good mechanical resistance of the laye spread; its use is therefore recommended for all applications. It should be added directly to the emulsion melted, the recommended volume being 15 ml per 1 kg of emulsion. According to individual requirements concerning the hardening grade of the emulsionlayer, this volume can be varied to some extent. Instead of the hardener supplied, other suitable hardeners can also be used, e.g. formaldehyde (1 to 5 ml of 10 % solution per 1 kg of emulsion), or in combination with the same volume of chrome alum solution (10 %).

Emulsion handling procedure

In a well-darkened room furnished with a suitable safelight illumination (identical with the illumination recommendedfor fixed-contrast FOMA photopapers), the emulsion is melted at about 35 to 40 °C in a water bath. Under continuous stirring, necessary additives are added to the emulsion close before its use: particularly the hardener (to ensure the mechanical resistance of the emulsion layer during processing), sometimes also Fotonal wetting agent (to make the emulsion spreading more uniform).

The way of emulsion spreading should be adjusted to the shape of the respective object and tested in advance. After heating up to 30°C, horizontal areas can be furnished with a single emulsion layer by spreading the volume proportioned before. Having set to a jelly, the layer can easily be dried in vertical position. Flat, not very coarse surfaces can be covered by a brush. In both last-named cases, 2 to 3 layers should be spread, the next one every time after the preceeding layer has been thoroughly dried. Regarding nonuniformities caused by the manual emulsion spreading, a yield of only about 3 sq. m per 1 kg of the emulsion should be taken into consideration in both these cases.

Note: For each application only a necessary emulsion amount should be taken away from the stock and melted. The non-spent emulsion should not be re-chilled (contains hardener!).

Storage

The photographic emulsion should be stored in darkness, preferably in closed original packagings (other chemically inactive packagings can also be used, e.g. PE- and PP-bottles, glass and the like). An important storage condition is a stable temperature ranging from 4 to 10°C. The emulsion, however, should not be allowed to freeze. Although disinfectants have been added to the emulsion during production, the emulsion should be handled with care to avoid contamination with bacteria and moulds. The above conditions having been kept, a shelf life of the stock emulsion (without hardener) of about 6 months can be taken into account.

Recommended way of packaging waste disposal: After a thorough rinse out, PE-, PP-bottles and cardboard boxes are recommended to discard in special containers intended for the salvage of scrap plastics and assorted paper respectively.

The product has been produced and marketed in conformity with a quality system according to the international standard ISO 9001:2000.