



## VARIABLE CONTRAST Liquid B&W Photo Emulsion

### APPLICATIONS

This is a light-sensitive chloro-bromide silver emulsion, which can be applied to various surfaces such as glass, ceramics, cardboard, fabrics, plastics etc. It is then exposed with a pictorial or graphic subject. The emulsion is variable contrast and can be used with standard variable contrast filters.

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The solid photographic emulsion is liquefied by heating, to permit removal from the bottle and coating on to the chosen surface. The bottle must only be opened and coated under a red darkroom safelight.

### SAFETY PRECAUTIONS

The emulsion is relatively harmless but normal precautions for handling chemicals should be observed such as rubber gloves and eye guards and adequate ventilation. Keep out of reach of children. Do not eat, drink or smoke while mixing emulsion. Do not ingest.

### EMULSION PREPARATION

The closed bottle of solidified emulsion should be placed in a water bath at a temperature of about 100°F to a maximum 120°F.

It will take approximately 45 to 60 minutes for the complete contents to become liquified.

Do not shake the contents as this will create air bubbles in the emulsion.

Do not use implements made of plain steel, copper or brass, as these may react with silver compounds in the emulsion.

Avoid repeated melting and cooling of the emulsion. It is better to melt the emulsion once and store unused emulsion in small containers for future use. Black plastic 35mm containers are ideal for this purpose. One container will coat about six 8"x10" prints.

### SURFACE PREPARATION

Surfaces such as paper or cloth can be coated without any surface preparation. Other surfaces may need preparing before coating to improve adhesion of the emulsion. A pre-coat of polyurethane varnish, satin finish is recommended where a transparent coat is required. If the colour of the base material is less important and an opaque coat is required, an oil-based white or tinted primer should be used.

The emulsion is water-based, so it will tend to dissolve water-based finishes resulting in poor coating quality.

### COATING EMULSION

**Safelight:** Use a red safelight while coating the emulsion. During the drying stage total darkness is preferable, to prevent safelight fogging.

The emulsion can be applied by brush, paint roller, sponge or spray gun. On flat surfaces the emulsion can be flowed over the surface and the excess drained off. The coating of a few smaller pieces of the same material at the same time make useful test strips for later exposure.

The Variable Contrast emulsion should not be diluted to control contrast. Expose using standard standard variable contrast filters. If you choose to dilute the emulsion you will compromise many of the advantages of the VC emulsion. It is recommended that no dilution be used regardless of the surface you are coating. If more than one coat is necessary, the first coat should be 'tacky' and not completely dry.

**Coating Paper:** Depending on the size of the paper and quantity of emulsion available, paper can be dip-coated. Pour the emulsion into a tray the same width as the paper to be coated. In a continuous motion pass the lower surface of the paper across the surface of the emulsion. With practice, a smooth even coating can be produced.

Preheating the base (with a hair dryer) to the temperature of the emulsion improves the flowing properties and even spread of the emulsion. On materials with uneven surfaces the coating is best applied by immersion.

After coating keep the base horizontal. The emulsion is solid after approximately 30 minutes. Chilling the emulsion will reduce the time. Use a cool fan or a cool hair dryer to speed the drying after the emulsion is solid. For best results leave the material to dry overnight.

### EXPOSING EMULSION

When thoroughly dry, the coated material can be exposed with an enlarger using standard variable contrast filters or by contact printing. Variations in the thickness of the coating and incomplete drying considerably impair/reduce the sensitivity. Completely dry coated material can be stored in light-proof conditions for future use, if required.

### EMULSION PROCESSING

#### Development

Depending on the base, develop in a tray, by brush or sponge, using any general-purpose black and white print developer. Temperature of the developer should not exceed 68°F to avoid melting the emulsion. Pre-soaking the emulsion with cool water for 30 seconds will help even out development where large surfaces are to be processed in stages.

Make initial tests using a stop bath after development. If blistering or separation from the base occurs, reduce its strength, or use a water rinse instead.

#### Fixing

Rapid ammonium thiosulphate fixers (most liquid fixers are rapid fixers) may cause bleaching of the image. If bleaching of the highlights is occurring, a slower-acting sodium thiosulphate based fixer can be used.

#### Washing

Wash for 20 to 30 minutes in cool running water. At this stage the soaked emulsion is very fragile and sensitive to physical damage.

#### Drying

The finished result can be air-dried at room temperature or with a cool-air dryer or fan.

### FURTHER PROCESSING

This is a variable contrast chloro-bromide photographic emulsion and reacts to the same toners as a bromide photographic paper. Photo dyes, colour toners or paints can all be applied to the finished image.

### PROTECTIVE COATING

If moisture is likely to be a problem the surface can be protected with any clear finish, such as varnish, lacquer, acrylic spray, etc.

### TROUBLE SHOOTING

**Bubbles in the emulsion:** Small bubbles will print as little shiny specks on the dried print. Larger bubbles are more noticeable. The best way of preventing bubbles on the print surface is to make sure the emulsion is free from them in the first place, by skimming the surface. Bubbles seen on the newly coated surface can be burst by touching them with the end of a glass rod that has been dipped in emulsion.

**Emulsion lifts off during processing or washing:** Incorrect surface preparation causing poor adhesion of the emulsion.

**Emulsion melts during processing:** The emulsion will melt if the processing solutions are too warm. All processing chemicals including the wash water should not exceed 68°F.

**Poor density in the blacks:** Insufficient emulsion coated on the surface or diluted emulsion. Do not dilute emulsion for contrast control; use standard variable contrast filters during exposure as you would with any other variable contrast photographic paper. Diluted emulsion will show less density, and streaks and brush strokes may become more obvious.

**Discoloured blotches in the emulsion:** Insufficient fixing. If the coating has been uneven, these are likely to be areas where an excessively thick emulsion layer has been coated.

**Image is unstable and fades with age:** Insufficient fixing; insufficient washing, or both.

### STORAGE AND HANDLING

Use product within six months of opening container. Keep unused portion capped and refrigerated. Unprocessed, unhardened emulsion can be removed from surfaces with hot water. Processed, hardened emulsion can be dissolved with household bleaching solutions. Remove stains from hands or clothing with dilute bleach, followed by a rinse and wetting with fixer solution, then wash.



Kentmere Photographic Limited  
Staveley, Kendal, Cumbria, England, LA8 9PB