

-ADOX POLYWARMTONE EMULSION - PRINTOUT INSTRUCTIONS-

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- POLYWARMTONE -

Originally a legendary paper from Forte, its recipe would have been lost in the digital revolution, if not for ADOX saving the production technology. It took the company ten years to recreate this naturally warm, beige-green, rich, extremely vintage-looking and toners-responsive emulsion - and now it is available for artistic work on a variety of surfaces.

- EMULSION -

A photographic emulsion is a mix of gelatin and silver halides. Those silver halide crystals are treated, shaped and sensitised by professional emulsionists, creating a unique "look": certain grain shape, size, and tone. This emulsion can then be theoretically coated onto any base, but analog photo companies coat them on either film or paper support, ensuring a perfect even layer and repeatable results.

With the Polywarmtone emulsion, it becomes possible to create unique warm-tone papers with authentic brush strokes, or print on alternative materials, while keeping all the characteristics a quality paper would have.

COATING WITH THE POLYWARMTONE EMULSION (PWE): OVERVIEW

The PWE, while stored, is soft and jelly-like.

To become usable, it has to:

1. Have a good support it can adhere to
2. Melt
3. Be properly coated
4. Dry well
5. Harden (become less soft, more resistant to touch)

- EQUIPMENT -

For coating, apart from the Polywarmtone emulsion, you will need special photo gelatin, emulsion hardener, a separate light-tight container, a thermometer, the support you plan to coat on, a brush and a pair of gloves.

- GELATIN -

The best binding substance is gelatin. It ensures that the emulsion sticks well. It is used to pre-coat everything: all types of paper, glass, textile, and even bricks or walls!

Fabric can be coated without a gelatin layer, but the emulsion will be harder to spread evenly, because it soaks into the textile. Some papers also soak the emulsion more than others - it has to be tested individually.

ADOX Colloida C is a premium-level pure photographic gelatin. Regular food gelatin is likely to fog the emulsion. Colloida C is very easy to melt and apply, and ensures a good even base for the future prints. It is coated and dried in daylight.

Alternatively, the **ADOX Art Baryta** paper is already coated with gelatin, so the PWE can be applied to Art Baryta straightaway.

- GELATIN COATING -

Depending on the desired effect, the the coating area can be isolated with masking tape for clean edges. You should also coat some small test strips, and mark the front (or back) side before coating, because the emulsion side will be extra difficult to identify later, under red light.

Colloida C* takes a while to dilute. Instead of mixing for half an hour, it is best to let the gelatin soak for 15 minutes in warm water first. When Colloida C is well soaked, more water of the necessary temperature (45°C/113°F) should be added and stirred.

This product is not overly sensitive to temperature changes and accuracy.

* *ADOX Colloida R (ripening) and P (precipitation) gelatins can be used too, but they have a higher price due to even more precise parameters intended for emulsion-making.*

Coating with gelatin is very easy: it can be done in daylight with no safety precautions. When coating textiles, make sure to have an easy to clean work surface underneath. Drying takes anything from 1 to 4 hours, depending on the room humidity and how much the support holds moisture. Hanging/laying to dry next to a heater accelerates the process.

- PWE HANDLING -
!DO NOT OPEN THE POLYWARMTONE EMULSION
UNDER ANY OTHER LIGHT BUT RED!

Unless using the entire jar in one coating session is planned, it is best to take out and melt only necessary amounts. A 13x18cm print requires from 1,5 to 2ml of emulsion for a single layer, depending on the way of coating.

Taking out the PWE is easiest with a clean stainless steel fork. The emulsion is jelly-like and may slide off a spoon. It is also quite firm, and can break a plastic fork.

Handle the emulsion in gloves (not only for safety - it is also extra sticky!).

For melting, the PWE should be placed inside a light-tight container (sold at FOTOIMPEX separately). Theoretically, it can also be melted in any other container, however, excessive exposure even to red light can cause fogging.

- PWE MELTING -
!DO NOT MICROWAVE THE EMULSION!

The emulsion melts at 45°C/113°F. Exceeding 55°C/131°F can lead to emulsion fogging. Re-melting the same emulsion more than 3 times is not recommended. If the PWE is in a light-tight container, melting can be done in daylight.

A temperature control unit is, of course, best, but not necessary. You can keep some extra hot water in a separate bucket, adding to the main bucket as the water cools down, while having a thermometer always on, during both melting and coating. Very small temperature fluctuations aren't critical.

The emulsion is melted when it freely splashes inside the container.

- PWE APPLICATION -

Various brushes create different "looks" of the strokes. A Hake brush is the one used most for alternative processes. It exists in various sizes, and its softness ensures no damage to previous layers. Alternatively, synthetic flat brushes are used as well as plastic rods and more sophisticated systems.

When coating, bubbles are likely to be encountered. They can either be embraced, or fought by avoiding fast movements that would "whip" the emulsion. It should be poured slowly on the support. A syringe can be used to measure the exact amount needed - but it provokes bubbles too.

One layer of PWE for paper and textile is usually sufficient. Wood, glass and some other materials look best with two layers. A second layer can be applied after the first one is dry to touch.

- PWE DRYING -

The emulsion must dry in complete darkness to avoid extended red light exposure. In absence of such a possibility, papers or wood could be put in empty boxes, which then go inside light-tight black bags or are taped all around to avoid light leaks.

Cardboard takes humidity quite well, but make sure the boxes don't sag in the middle. Unless in black light-tight bags, do not leave those boxes in broad daylight. Under the bed, inside a cupboard or a suitcase is a good spot. Darkroom paper safes are a more professional option. Make sure to wipe the inside residual moisture after drying papers

Textiles dry best when hanging. If that is not an option, make sure to have a plastic support underneath (plastic bag or a piece of plexiglass). Otherwise the emulsion will soak through the textile and adhere to any other support. This is where gelatin pre-coating helps too.

Drying time depends on variables like coated support, room humidity and air circulation. It is best to do an experiment and check the PWE every 30-60 minutes to determine a time for a given setup. In a very dry warm room, the emulsion can become usable in under 1,5 hours, but in a humid environment it might need up to 7 hours, especially on textile.

- COATED MATERIAL STORAGE -

After the papers, fabrics or wood are dried, they can be stacked inside light-tight bags, as the emulsion won't scratch or come off from reasonable friction. Coated materials, if stored in a dry cool place, are expected to have at least 4 months shelf life. It is best to have separate labeled bags for test strips and full pieces.

- EXPOSURE -

Test strips should not necessarily be on the same support as the final print. Times, however, have to be tested for each individual case. For example, 1 PWE layer on paper could = 2 layers on wood. Or 10s exposure on paper could = 15s on fabric. The difference is usually not extra dramatic. When printing for the first time, some extra material should be coated for testing.

Importantly, the enlarger should be re-focused for each support! Wood or fabric can be quite thick, with the printing surface much higher than paper.

- PROCESSING -

Processing is done as usual: developer, stop bath (+hardener), fixer. Chemicals can also be applied with a sponge or a brush in case the support doesn't fit into trays, or if the emulsion tends to slide off.

When processing fabric, it is important to let the chemistry drip properly to avoid excessive cross-contamination and fast exhaustion. Having extra trays just with water for a quick rinse between steps is a good practice.

When processing wood, it is best to use a sponge only on the coated part, avoiding soaking the support - getting developer and fixer out of wood could be a challenge at washing stage.

- HARDENING-

When coating on appropriate paper and not doing any further artistic manipulations, hardening is not always needed. The emulsion dries and stays very well. However, in every other case, a hardening additive like **ADOX EMH-1** is strongly advisable.

It is an acidic chemical, which can be added to the stop bath or used diluted with water between stop bath and fixer. If emulsion damage occurs in the developer, the ADOX EMH-1 can be used as a pre-bath. However, the support should be rinsed well before going into the developer.

A hardening fixer of choice can be used too, but with unusual surfaces the earlier the emulsion gets hardened, the better. In case of some supports, even doubling the hardening time, or using both EMH-1 and a hardening fixer is possible. Over-hardening is not something that is likely to happen.

- WASHING -

Washing should be done in very cold water, with a very mild water flow. Warm water will re-melt the emulsion. When PWE is wet, it is especially delicate. To shorten wash times, Adox Thio-Clear or a similar product are of great help.

- TONING -

The Polywarmtone emulsion, just like the original Polywarmtone paper, gives a strong response to all toners. When using toners requiring bleach (like a two-bath sepia), hardening is strongly advisable. It is best to dry the print before toning, and especially before bleaching, as keeping the emulsion wet for a very long time is making it increasingly fragile.

All this extra effort is a trade-off of self-coating. Hardeners used in photo papers are highly dangerous, and cannot be sold freely. The ones available for general public are, naturally, not as strong - which makes the emulsion more delicate. However, with some experiments and experience, handling the Polywarmtone emulsion turns out to be almost as easy as the regular paper, and the artistic possibilities become endless.

- SAFELIGHT FOGGING -

The PWE shows no signs of fogging under the ADOX Supersafe light for 15 minutes. Other safelights could fog the emulsion faster. The distance to the red light, is, of course, a factor. All the time the emulsion spends under red light, including melting, coating and processing - counts. A good practice is keeping red lights at a decent distance, not shine them directly into the emulsion and process prints face down until the fix bath.

- CONTRAST -

The contrast 2.5 - 3 (depending on layer thickness) was chosen as a perfect balance for most negatives. It can be lowered with the pre-flashing technique.

- CAPACITY -

One jar of Polywarmtone emulsion covers from 2,5 to 3 sqm (26-32 sqft) of paper, depending on the coating thickness.

- STORAGE -

The emulsion is best stored at lower room temperatures or in the fridge. After a year of storage, or improper storage conditions (too high temperature), it remains usable but may lose a step in contrast and a stop in speed.

- SAFETY -

When processing textiles or other materials requiring hands to be in contact with chemistry, rubber gloves should be worn.