



Retro Original Gelatine Chloride Printing Out Paper

Retro Original Printing-out Paper (P.O.P) is a silver chloride, gelatine emulsion coated onto a double weight fibre base paper. The surface finish is glossy with a very fine lustre. The emulsion contains an excess of silver nitrate and will print-out with great intensity. No developer is required; the image is formed directly by the action of light on the paper during exposure. The colour of the image may be variously described as aubergine, purple, blood-red, rust-red or plum red. The colour of the final processed image can range from orange-brown, gold through light-yellow for images which are merely fixed, to a range of chocolate brown, purple-brown and lighter golds depending upon the toning of the image.

History

Printing Out Papers were originally manufactured in Europe by Johann Baptist Obernetter of Munich in 1884 and Raphael Eduard Julius Liesegang of Düsseldorf in 1886 making gelatine printing-out papers one of the longest-living photographic products, being marketed continuously for well over one hundred years.

In the mid-1890's many manufacturers produced POP and it was for many decades the standard printing papers in the industry.

Retro Original Printing Out Paper is manufactured in the UK according to an original formula from the Chicago Albumen Works and their 'CENTENNIAL™ DW' brand is marketed by them in the USA.

Handling

Retro Original POP may be handled in subdued tungsten or fluorescent light for short periods of time as it is sensitive to blue and ultra-violet light only and its printing speed is extremely slow. It will print-out quite quickly in ordinary daylight and very quickly (within a few seconds) in very bright sunlight.

The paper will mark very easily and fingerprints show up very clearly due to the excess of silver nitrate in the paper and the absence of any supercoats protecting the emulsion. Handle the paper with clean and absolutely dry fingers and by the edges only or wear gloves.

Exposure.

The slow printing speed of the paper requires exposure to be made by contact and illuminated by a strong ultra-violet (UV) source such as sunlight, a UVA lamp, mercury vapour lamp or similar. Home tanning equipment, now out of favour with the general public, are ideal sources but arguably the best, and most historically correct source is the sun itself.

Split-back printing frames are customarily used as the split back allows the progress of the print to be inspected during the exposure without losing registration between the negative and the printing-out paper. As these tend to be expensive, a heavy piece of glass may also be used to hold the negative flat against the paper on a solid baseboard of some kind (such as an enlarging easel) to good effect, or use pins to hold the negative in place.

POP will self-mask during exposure, this means that the shadow areas will develop to a certain density and then slowly stop – as the developed image effectively becomes a mask – but the highlights will continue to develop. If they look right 'cook' for longer as the image will lighten by 20-25% in the hypo fixer.

Processing

Simply rinse the print in ordinary tap water. Move the print around gently for about a minute. You will see milky clouds appear around the print which is caused by silver nitrate reacting with chlorine in the water to produce insoluble silver chloride. Continue to wash in several changes of water until the milkiness disappears.

Fix the print in a plain hypo (sodium thiosulphate) solution (150gms Hypo in 1 Litre water) for about 5 minutes. The print image will lighten alarmingly during fixing. Don't worry, the original tone will reappear. DO NOT use film or print fixers based on Ammonium Thiosulphate – they will fix the print but their aggressive action causes the image to bleach.

Wash for at least 30 minutes (less if using a hypo clearing bath) and dry, emulsion side up, on clean blotters or screens. Flatten dry prints in a heat press.

Toning.

Printing-Out Paper tones extremely well. If the original strong image tone is to be maintained, immerse the print in a gold toner after washing and before fixing.

Negatives for Printing-Out Paper.

As the process is contact, it follows that large negatives are required for full size images. Negatives should be somewhat denser than normal (about 1.8 if you have a densitometer) so aim to overexpose the negative you will use for the contact print. Over exposure of the print can compensate to a certain extent but a colour shift will occur.

Large negatives can be produced in a number of ways, here are a some examples:

1. Inter-positive method.

Make an enlargement of the original negative onto a sheet of ortho or Lith Film (such as Bergger, Maco Genius Film, Ilford Ortho Copy Film) and process the film in normal print developer. This creates a positive film. Contact print this positive onto another sheet of similar film to produce a negative.

2. Print-through method.

Place a print face down on top of a sheet of Ortho or Lith film and hold flat with a piece of glass, expose and process. This will produce a negative of the size of the original print. The advantage of this method is that the interpositive stage is omitted, saving on film.

3. Digital Negative

Create a negative black and white image from the digital original using the options in your image processing software, e.g. Photoshop and print this image on transparent film.

The advantage of this method is the ease of producing negatives from colour originals and the ability to control the negative density.