

Silver POP Lobotype

The combination of ammonium iron(III) oxalate and silver nitrate for a printing out process is obvious, even if the mixture of the two solutions does not look promising at first glance. However, this was one of the reasons why I considered initial attempts to have failed about 20 years ago. It is quite likely that other printers have already looked into this possibility. I would like to point out that I do not want to give the impression that I have found something completely new. The term lobotype merely serves to distinguish it from related processes such as Vandyke, Argyrotype, Kallitype and Athenatype.

At least two solutions are mixed, ammonium iron(III) oxalate in a concentration of 40 - 45% and silver nitrate in concentrations between 10 - 15%. A higher concentration than 10% is not necessary, but can be used to increase contrast and maximum blackening. As with other alternative processes, Tween can be added dropwise to facilitate uniform application, but this is not absolutely necessary. Adding a few drops of concentrated citric acid can be beneficial to facilitate clarification and shift the image tone to a slightly cooler shade.

When mixing ammonium iron(III) oxalate and silver nitrate, the result is not a clear homogeneous solution, but a milky emulsion with a tendency to segregate again quite quickly. If a larger quantity is prepared for coating several sheets, the preparation beaker should be swirled slightly before taking a partial quantity each time.

Example of preparation with 12.5% silver for a slightly higher contrast and citric acid for a cooler colour.

AmFerriOxalat	Cit.acid 50%	Tween	Silver 10%	Silver 15%
2 ml	4 drops	0	1 ml	1 ml

Addition of potassium or sodium platinate (1 drop per ml) increases contrast and maximum blackening. Additions of gold chloride or palladium chloride do not bring any improvement.

For an area of 20x25cm 2 ml of emulsion are needed.

The application can be done with a foam or hair brush. A dry hair brush (e.g. Hake Brush) is absolutely necessary for an even, streak-free application. An application with a foam brush can lead to a roughening of the paper surface as the layer becomes drier. The application should be levelled with short brush strokes in all directions until the initially moist glossy layer appears matt like a grained leather surface.

- Developer bath: Demineralised water or tap water slightly acidified with a few drops of citric acid (50%). Because this water bath, unlike developer, should only once be used for developing a print, tap water is preferable for cost reasons.
- The print remains in the first bath, whether water or developer, for three to four minutes.
- Claring bath: citric acid 1% 30 seconds to 2 minutes
- Fixer bath: ATS Fixer acidic 1+10 3 to 4 minutes

Some of the developers for Kallitype can also be used. However, a clear change of the image tone could only be observed in a few cases. In any case, these developers should be used more diluted.

Tested so far are:

- Sodium citrate 10%
- Potassium citrate 1.5%
- Ammonium citrate 5%
- Sodium acetate 2% - 5%
- Potassium oxalate and phosphates are unsuitable.

Recommended toners:

- MT10 gold toner before and after fixage and wash.
- Platinum and palladium toner before fixation
- MT7 iron blue toner after fixation and washing
- MT3 Variotoner after fixation and rinsing
- MT4 and MT5 Sulphur toners
- MT12 Cobalt toner

Final wash approx. 30 minutes when using papers over 300g.

Important:

The preparation container and brush must be cleaned with demineralised water immediately after use. Rinsing twice is sufficient. Brushes are then squeezed out using a folded sheet of kitchen paper.

Silver nitrate 10% or 15% with identical exposure and development.



Paper choice: Hahnemühle Platinum Rag and Bergger COT-320 with MT3 toning.
The COT-320 reacts much faster to the bleach and is therefore more colourful at identical times after toning. By adjusting the bleach concentration, almost identical colour shades can be achieved. With direct tonings (without prior bleach), the difference between these two papers is hardly noticeable.



The image tone after development and fixing is usually warm brown. Here, the paper was developed in a weak potassium citrate solution. The different image tone on the right hand side results from the addition of one drop Na₂ to two millilitres of coating solution.



Toning before fixing

Toning with platinum or palladium toner can only be done prior to fixing. Here is an example with a one-minute palladium toning after development in slightly acidified tap water. After toning, rinse briefly and fix as usual.



aka
2021

Especially the palladium toner tends to tone silver residues that are at the bottom of the tray, which is no surprise. With the small amount of toner solution used for cost reasons, the back of the print inevitably comes into contact with the bottom of the tray, and the toned particles are deposited on the paper. Therefore it is necessary to clean trays thoroughly before toning.

If less reddish image tones are desired without a change through toning, a combination of citric acid addition to the coating solution and development in sodium acetate is the best choice.



Ch. Mc
2021

Colour and contrast change through additions to the sensitising solution.

Citric acid and Tween



The colour difference occurs when Tween is added to the sensitising solution.

On the left sensitiser with Citric acid, on the right with Citric acid and additional Tween (3 drops per 2ml).

Potassium Platinate



AmFerriOxalate	Citric acid 50%	Tween 10%	Silver 12,5%
1 ml	1 drop	2	1 ml

Right hand side plus 1 drop Potassium platinate to 2ml as above. When platinum is added, the solution becomes cloudy. Stir until the solution appears as homogeneous as possible and then apply immediately. Developer Potassium citrate 1,5% 3 mins, ATS fixer 1+10 3 mins.

Sodium platinate (Na₂)



Addition of Na₂ for deepest black. Hahnemühle Platinum Rag, developed in slightly acidified water-

AmFerriOxalat	Weinsäure 50%	Na ₂ 10%	Silber 15%
1,25 ml	6 Tropfen	1 Tropfen	1,25 ml



Sensitizer for 3 Prints

AmFerriOxalate	Citric acid 50%	Na2 10%	Silver 12,5%
3 ml	21 drops	1 drop	3 ml

Paper Hahnemühle Platinum Rag
Developer tap water with 6 drops Citric acid 50% per litre

Papers, developers and tonings



AmFerriOxalate	Citric acid 50%	Tween 10%	Silver 15%
1 ml	6 drops	-	1 ml

Hahnemühle Platinum Rag 14x28cm, Sodium acetate developer (4%)



Bergger COT-320, MT10 Gold Toner 2 minutes after fixing.



If the unexposed coating edge has a slight tone after processing, potassium or sodium dichromate can be added to the coating solution as an anti-fogging agent.

AmFerriOxalat	Tween	NaDichromat 1%	Silver 12,5%
1 ml	2 drops	1 drop	1 ml

Bergger Cot-320, dev. tap water + 6 drops Citric acid 50%/litre, MT6 Gold toner 39°C 2 mins after fixing



Chromate as an anti-fogging agent can also be added to the developer.

Arches Platine,
1ml AmFeOx
4 drops Citric acid 50%
1ml Silver nitrate 15%

Sodium acetate (5%) developer with four drops contrast booster (Sodium dichromate 50%)



Bergger Cot-320, developed in tap water with 6 drops Citric acid 50%



Hahnemühle Platinum Rag 14x28cm
 2ml sensitizer with 2 drops Potassium tetrachloroplatinate,
 developer Potassium citrate 4% 4 mins,
 Citric acid 3 mins, ATS acidic fixer 1+10 3 mins.



C. Ly
2021

Lobotype 20x20cm on Arches Platine 11x14inch.

Contrary to other papers Arches Platine doesn't need additional Platinum salts to achieve almost neutral black tones.

2ml sensitizer with 3 drops Tartaric acid 50% and 2 drops Tween 10%,
developed 4 mins in acidified tap water (4 drops Citric acid 50% per litre),

MT3 Vario toner: bleach 1+75 50 secs, toner setting D



Bergger COT-320. MT3 Vario toner

If a toning with thiourea is planned, the print should be made slightly darker. With short bleaching times, the maximum blackening increases, but the highlights and midtones become lighter.

Top left the untoned print, quite cool due to the addition of one drop Na₂S₂O₄,

Top right MT3 Variotoner: bleach 1+75 35 seconds, toner setting D,

bottom left thiourea over-toned with MT10 gold toner 7 minutes,

followed (bottom right) by MT7 iron toner. The whole image turns greenish blue. A subsequent lead acetate bath (1.5%) 30 seconds reduces the iron hue starting from the highlights.

One can argue about which toning is the more beautiful, the examples are only meant to show the possibilities. For example, a longer bleaching time for the first toning would ensure that the warm tones would dominate even after the final iron toning.

The digital print negative was made from an enlarged photogram of a magnolia branch on baryta paper.



A difficult high-contrast negative gave me a lot of work to print. The key to success was a somewhat unusual tuning of the sensitiser.

Sodium tungstate decreases the contrast, the colour becomes warmer.

The addition of Palladium chloride increases the density of the shades, but causes a little fog in the lights. To reduce the fog, a little Dichromate is required.

Sensitizer for two prints

AmFeOx 40%	Citric acid 50%	Tween 10%	Silver 13%	Tungstate 40%	Palladium	NaDichromat 0,5%
2 ml	6 drops	6 drops	2 ml	5 drops	2 drops	1 drop

Paper Hahnemühle Platinum Rag

Developer Potassium citrate 0,5% sol. (works a little softer than water).

On the left air dried with a reddish brown, on the right hot pressed in order to reduce the saturation to a less reddish brown.



As a rule, the image colour of lobotypes is reddish brown. In addition to toning to bluish tones, they can also be redeveloped to cool tones after bleaching. The bleach for this purpose contains potassium ferricyanide and potassium bromide. After complete bleaching, a latent bromide silver salt is present, which can be redeveloped to metallic silver in all known developers. Ferricyanide/Bromide bleach 1+40 one minute and after washed out the yellow stain of the bleach redeveloped with SE6 Blue developer 1+10 two minutes.



Hahnemühle Platinum Rag,
MT6 Nelson Gold Toner 41°C 5 mins, refix 30 secs



Pla
2021



Pla
2021



Pla
2021



Pla
2021

Zero Image pinhole, HP5 in Finol,
Hahnemühle Platinum Rag
above left developer Sodium acetate 4%,
right MT3 Vario: bleach 1+75 45secs, toner setting for low saturation 50+10+940ml,
below left MT3 over-toned with MT7 Iron toner 4+4+10+4+600ml 1:30 mins,
on the right Iron over-toned with Lead acetate 1% 45 secs.



Alma
2021

Lobotype 19x24cm on Bergger COT-320
developed in demineralised water
MT10 Gold toner prior to fixing two minutes.



Bergger COT-320, left untuned, right MT3 (D) followed by MT10 Gold one minute.



Hahnemühle Platinum Rag

MT3 Vario toner

bleach 1+100 75 seconds
toner setting A



MT3 Vario toner

after a short bleach the colour changes to
green and the shades turn darker

bleach 1+75 30 seconds
toner setting D
50+130+800ml



Arches Platine

MT3 Vario toner

cooler tone with less saturation
due to higher diluted bleach
and less alkali for the toner

bleach 1+100 30 seconds
toner setting 50+20+900ml



Selenium toning with a short detour.

In order to be able to use "normal" selenium toners (which contain Ammonium salts and/or Thiosulfate) for Lobotypes and Kallitypes without the usual fading and yellowing of tones, the print should be bleached (potassium ferricyanide and bromide) and redeveloped in any developer for gelatine silver prints.

The toning target was a split tone with subtle reddish shadows and bluish highlights.

Lobotype on COT-320. Due to the bleach and redevelopment 25% overexposed.

Left bleached 1+40 2 mins and redeveloped in SE2 Warm 1+10 1 min.

Middle MT1 Selenium 1+10 2 mins with the typical, initially invisible result of not completely toned highlights and midtones.

Right MT7 Iron Blue Toner (4+4+12+4+500ml) 50 secs followed by Lead acetate toner 2,5% 50 secs.



Hahnemühle Platinum Rag

Left side: bleach 1+40 30 secs and redeveloped with Polychrome Siena 20+35+35+700ml 1:30 minutes, MT1 Selenium 1+10 1 minute

Right side, followed by MT10 Gold (10th print in 250ml) 5 minutes



Hahnemühle Platinum Rag

MT10 Gold toner (15th print in 250ml)
3 minutes prior to fixing.



Hahnemühle Platinum Rag

bleached and redeveloped in SE2 Warm

MT1 Selenium toner 1+10 1,5 mins

Cobalt toner followed by Iron toner and
finally by Lead acetate



Lobotype on Diploma Parchment

To demonstrate the effect of Tween, an example without Tween (above) and one with Tween (below).

Tween is used by many to achieve an even application. But it also has a considerable effect on the gradation and colour of silver layers.

Sensitizer for two sheets of 11x15 paper, picture size 14x28cm:

Ammonium ironIII oxalate 1,7ml

Silver nitrate 1,7ml

Citric acid 9 drops for cool greenish tones

Identical exposure and developer (Sodium acetate 5% sol.)

below with Tween (5 drops 10% to about 1,8ml Sensitizer, too much for my taste)



Hahnemühle Platinun Rag

Potassium citrate 1,2% developer



Hahnemühle Platinun Rag

Potassium citrate 1,2% developer

bleach and redevelopment

bleach (ferricyanide/bromide)
1+75 45 seconds

redeveloped with
Siena (Glycin) 10 +15+15+800 6 mins



Hahnemühle Platinum Rag

developed in
demineralised water

Platinum toner
one and a half minutes



Hahnemühle Platinum Rag

developed in
demineralised water

Palladium toner
one and a half minutes



Palladium toning with warmer result
on Bergger Cot-320
and with added
Tween and Sodium tungstate
to the sensitizer



Bergger Cot-320
MT6 Nelson Gold toner
42°C 3 minutes



The Lobotype requires a negative with a long tonal range. A significantly longer one than we get with normal development for silver gelatine prints. So if you want to print from the original negative, the film should be exposed normally (box speed) but developed longer than usual. A sensitising solution with a high silver content (15%) should be chosen for printing. The ideal exposure time is reached when the exposed negative edge becomes black and the darkest zone in the image almost black. If the negative range is only slightly too short, the result will be unsatisfactory. In such cases, only the Kallitype works.

Sulphur toning with MT4 and MT5 is possible.



Hahnemühle Platinum Rag

MT4 Siena 1+300 1 minute

This toner still works at dilutions above 1+1000. Therefore toning progresses during the final wash. That's why the toning should only be done briefly until all values have taken on a bluish tone. The final shades of yellow and green only appear during washing.



Hahnemühle Platinum Rag

MT5 Sepia 1+50 65 seconds
bleach 1+75 30 seconds
and again
MT5 Sepia 1+50 30 seconds



Hahnemühle Platinum Rag

Contrary to MT4 Siena (Polysulphide toner), the MT5 Sepia (Sodium sulfide toner) does not continue toning during the final wash - what you see is what you get! The hue turns greenish after one and a half minutes at a dilution of 1+35. When reddish yellow tones are desired, the toned print can be bleached and toned again. On the right: after toning a bleach of 1+75 for 50 seconds and MT5 again 40 seconds.



Bergger Cot-320

Sulphur toned Lobotype

MT4 Siena 1+50 45 seconds,
with progressive toning during the wash



Hahnemühle Platinum Rag

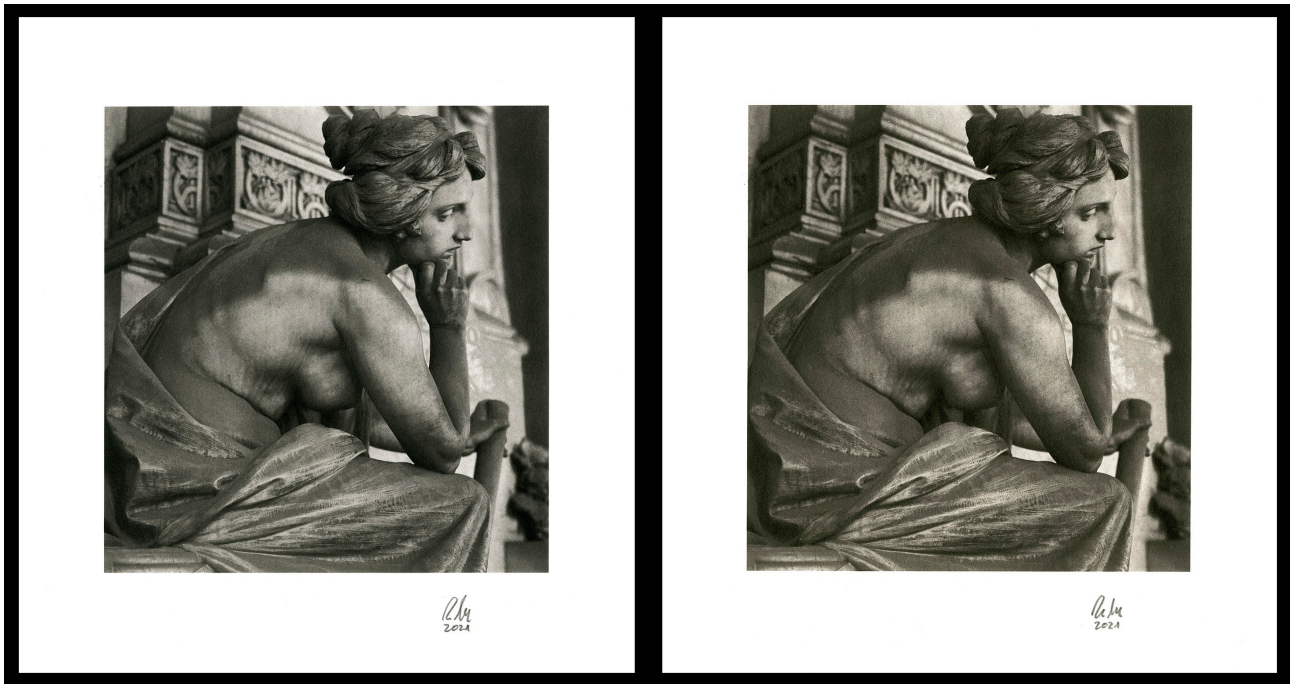
Two toners prior to fixing: Gold toner for the lights and mids, followed by Platinum toner for the shades.



Bergger COT-320

MT10 Gold Toner prior to fixing 2 minutes.

Contrary to a toning after fixing the Gold toner does not tone the silver-rich shades completely within two minutes. At least one minute and a half is necessary for bluish lights.



Hahnemühle Platinum Rag

Palladium toner for neutral tones

MT5 Sepia 3 minutes, bleach 1+75 1 minutes,
MT3 Vario D for more yellowish lights.



Hahnemühle Platinum Rag
Sensitizer with Sodium Tungstate and Palladium



Arches Platine

2 toners

MT3 Vario
bleach 1+200 30 seconds
toner 50+10+900

MT7 Iron Blue
4+4+9+4+500 1 minute
Lead acetate 1% 30 seconds



Hahnemühle Platinum Rag

untuned



Alu
2021

Hahnemühle Platinum Rag

2ml sensitizer with two drops Citric acid 50% and one drop Tween 10%

developed in tap water with some drops Citric acid
clearing bath Citric acid 1% one minute
ATS acidic fixer 1+10 three and a half minutes