

ALUMINIUM ETCHING



“Hares” Robin Ezra

Nik Semenoff who pioneered this technique said he wanted: *“A simple, environmentally safe, inexpensive, and readily available mordant that would be helpful for today's etchers. Since editions at art schools are usually limited to six to twelve prints. A search was undertaken for materials that react much like traditional metals, yet withstand the printing of smaller editions.”*

We think this is a wonderful way of making an aluminium etching without the nasties.

One outstanding feature of this method is the beautiful rich aquatints magically created without resorting to resin or spray.

We use safe resists and grounds to achieve great results

First make the etching solution:

This formula is adapted from Nik Semenoffs recipe

CuSO₄ (copper sulphate -- bluestone)500g – Garden shop
NaCl (sodium chloride -table salt)..... 125g- Supermarket
NaHSO₄ (sodium bisulphate- Harpic Powder) 12g - Supermarket

H₂O (water).....5-10 litres

Mix dry ingredients in a large plastic container, store dry until needed.
Take 1 cup dry mixture and add to about 1 litre water. You may need to make the mixture stronger, test first. If you notice the mixture is not biting well it is a good idea to add a little more copper sulphate to the bath when the copper becomes exhausted during platemaking.

Clean & degrease the plate

Use a scourer and cream cleanser such as Jiff, dry with a hairdryer. If there are scratches it may be necessary to use fine wet and dry sandpaper rinse and dry. Protect the back of the plate with contact film.

Applying the ground or stop out

We use Gripset Betta acrylic bitumen rubber paint as a stopout & ground. Use 3 or 4 thin layers of paint thinned with a little water and applied with a sponge for best results, dry between layers. **See Betta bitumen paint notes below.**

If using acrylic based stop outs such as Golden and Future floor polish dry thoroughly by applying heat before immersing in the etching bath, a few minutes on the hot plate will dry the plate.

After applying the ground the image can be drawn into the plate with an etching needle

Wax crayon, cophera/crisco and Sharpies make interesting stop outs

Etching the plate

For etched line work, use gloves to immerse the plate in the etching bath for 15-20 minutes until the depth of the etched line can be felt with an needle. The time depends on the strength of the etching bath mixture. The bath loses strength during use and must be replenished by adding a little more dry mixture to bring the colour back up.

Clean off the ground - see bitumen paint notes below - degrease and dry then begin stopping out the lightest tone, immerse in the bath for 1 minute.

Take plate out and rinse and dry before applying further stop-out for the next tone.

Because of the action of the etchant on the metal a good aquatint is achieved without recourse to resin etc. DON'T feather, it is best to leave the surface untouched while the plate is etching to avoid unwanted marks. Keep repeating the process from the lightest to darkest tones making the times longer for example, 2mins, 5 mins, 10 mins, between tones, the longer the time the darker the tone.

When the darkest tone has been achieved, rinse with water and clean off the stop-out with whatever solvent is necessary then remove the backing contact.

The plate is now ready for printing.

Some safer stop-outs, grounds & their solvents

To remove Betta acrylic bitumen paint – VCA (Vegetable Cleaning Agent) or acetone.
Golden stop-out varnish - remove with cloudy ammonia then detergent in warm water

Long life acrylic floor polish - use a few drops of blue food colour to tint the polish - remove after etching with cloudy ammonia then rinse

Wax based crayon - remove with VCA or odourless solvent, then hot soapy water

Cophera or Crisco melt on hotplate - remove with tissue then hot soapy water

Sharpie pen - acetone to remove

NOTE: When using ammonia, acetone or odourless solvent - wear gloves and use a fume cupboard or complete the process outside.

VCA - Vegetable Cleaning Agent, wear gloves when using then degrease with cream cleanser such as Jiff & rinse the plate well

ACRYLIC BITUMEN RUBBER PAINT AS A GROUND & STOPOUT

Gripset Betta bitumen rubber paint is a product used in industry as a waterproofing agent for roofs etc. As a stopout it is a preferable alternative to the turps based traditional bitumen paint. It has NO VOCs and is not classified as hazardous according to criteria of Worksafe Australia.

Gripset bitumen rubber paint available at hardware & paint supply stores.

There is no discernible odour when using the paint unlike the traditional counterpart and it is water mixable for ease of use. It can be applied as a ground (applied with a sponge) and also as a stop out. Water needs to be added so that it is not too thick - where it was very thick it resisted the etching needle and where too thin it was foul bitten. A little practice will determine the best thickness.

To remove soak in a bath of VCA - Vegetable Cleaning Agent – a safe solvent.

Altogether it is far more pleasant to use than bitumen paint, no discernible fumes, easier to apply and dries quickly with the help of a hairdryer or a minute or two on the hotplate.

Degrease – The more evenly you scour the surface the better your aquatint will be. Scrub the plate with a scouring pad and a cream cleanser, rinse and dry with a towel or hairdryer Cover the back of the plate with contact film.

Keep fingers off the surface until the ground is applied



Ground painted on too thinly optimal thickness drawing with etching needle etching as usual

Bitumen rubber as a ground

Try not to paint too thinly, see picture above left, a thin coat like this will foul bite.

Conversely, a coat painted on too thickly may resist the etching needle. A little practice will determine the best thickness.

After using this material for a few years we think that the best way to apply is to add water to the paint and coat with 3 or 4 **thin** coats using a sponge & completely cover the plate, dry between coats and make sure the plate has cooled completely before adding the next coat.

Keep your sponge in plastic to prevent it drying out. After etching remove with VCA or Acetone, degrease, rinse and dry before stopping out for tones.

Bitumen rubber as a stopout



Expect perfect results without foul biting but make sure each application is dried thoroughly before re-immersing in the etching bath.

Apply the paint the same as you would a regular stopout. Immerse in the etching bath – stopping out to gain various tones – no resin or spray required to get the aquatint it occurs naturally by the action of the copper on the aluminium.

When the etching is complete soak plate in VCA, clean and degrease with a soft sponge and cream cleanser, sandpaper rough edges, rinse and dry. You are ready to ink and print.



Stopping out

final plate ready to ink

sanding the edges smooth

the print



Left: note where the ground was thickly applied & resisted the etching needle. *Right:* final print

- VCA removes the paint perfectly. After removal rinse the VCA off the plate and degrease with cream cleanser on a soft sponge.
- Keeping a small amount of the paint in a jar may be the best way to use this product - if the lid is left off the tin it will dry out.
- Gripset Beta non-toxic Bitumen Rubber paint available from hardware and paint supply stores