Methods for Applying Patination Solutions

by Charles Lewton-Brain 

Extremely clean metal surfaces give better results. See the article on “Cleaning metal Surfaces” for more information on cleaning.
We are assuming a clean, activated metal surface, preferably with a slight ‘tooth’ to it.

Cold Fuming

Generally speaking exposure to a fume or atmosphere which attacks the metal surface results in a more even effect except where condensation causes pooling of moisture on the surface. A simple method for doing this is to place the object on a small platform (to keep it out of the patination agent) in a large plastic container or bag and pour the agent out on the bottom of the container. It is then sealed and left to affect the metal. Examples of this are ammonia and vinegar. See the page on “Fuming metal surfaces” for more information.

Painted Solutions

The solution is painted on with a brush or swab. It may be necessary to use a tiny amount of soap or some alcohol in the solution to act as a wetting agent in order to obtain an even surface. The metal is allowed to dry and the application repeated a number of times until the color development is satisfactory. Often this may be done outside to aid in drying and eliminate fumes from the workshop.

Sprayed On

This serves as a method for obtaining an even or evenly speckled effect on the surface. It works well for three dimensional objects. Again, repeated applications and time yield the best results. Keep applications light. If using a spray bottle the solutions may need filtering before use. In the case of ammonia which decomposes rapidly in air one should spray the surface and then seal it off from the air in a closed (plastic) container.

Where a material moistened with a patination agent comes in contact with a surface etching, reaction takes place more readily at the point of contact. An object can be wrapped in cloth or string to take advantage of this. Organic materials such as feathers and plants may be bound to the object.
If tightly bound they will to some extent prevent surface activation by the patination agent and their outlines will be visible on the finished surfaces. When one binds with dry materials with or without organic materials and exposes the surface to cold fuming they act as resists and use can be made of this in developing pattern. In the case of ammonia it soon permeates the binding medium and begins etching and reacting with the surface at the contact points.

Pooling

If the agent is pooled on the surface it reacts where it is pooled. Fingerprints can be used as a grease source to force pooling to occur. Pooling will result in a variegated effect as the edges of the puddles will act differently upon the metal than the centers.

Immersion

The object is immersed in the solution. This tends not to work quite as fast with the agents recommended here but can produce even finishes. In some cases (as ammonia on brass) strong etching of the surface can take place. Immersion can be used as a method of coating an object with a solution by dipping it, removing it and allowing it to dry. This can tend to produce a concentration of effects where the liquid has run down the piece while drying

Moistened Shavings

Moistened (not wet) wood shavings or other porous materials work very well for differential patination/etching of surfaces. Again, contact points are the focus of action on the metal and very interesting surfaces are possible. Using ammonia or vinegar etching takes place producing texture as well. Possible media for this include resin-free sawdust and shavings, peanut shells, kitty litter, Styrofoam balls or chunks, crushed cork, sisal or other coarse fibers, pine needles, grass clippings, organic materials such as leaves, feathers and so on. Use them in a sealed plastic container to prevent evaporation. The piece may be shaken up in them to obtain an even effect.

Rowe and Hughes suggest making a dam of modeling clay to contain the most media in order to obtain pattern development or block areas of such effects on a piece. It should be noted in this context that modeling clay has a high sulfur content and will attack and etch silver while turning copper alloy surfaces black where it contacts them. This too could be used in developing pattern. The cat box or hamster cage could provide a good medium for patination in this technique.

Paste Applications

Patination solutions can be applied as a paste, in fact the plasticine just mentioned could be a paste application which results in a patterned application. The patination agent is mixed with a thick carrier (such as clay powder etc) and applied as a sticky patch with attacks the metal surface.

Some Agents Recommended for Use on Copper Alloys

Household Clear Ammonia: fume produces greens and blues, olive green on bronze. Can produce bright blues with brass especially when used as a fuming agent. It affects the structure of brass if left in contact too long (possibly reacting with the zinc) and the brass may crumble or fall to pieces with light pressure. Therefore if using brass and ammonia the structural elements of the piece should be in copper or another metal.

Vinegar: fume produces dark greens, blues and will also affect brasses in the same way as ammonia.
Salt solution: Varying strengths of salt solution may be made up and applied to the metal. Colors formed include some tones of red on copper. Deep green is common.
Dry salt: This can be sprinkled on the metal surface. It draws moisture to itself in a humid atmosphere and will react with the surface over a period of weeks. When finished the loose material may be brushed off leaving a variegated surface of greens, browns and possible reddish patches.
Iron filings: In combination with any of the above they will react to produce localized dark mottled surfaces.
Combinations: Various combinations of the foregoing are effective for patination. There are also other household chemicals which will produce patinas on metal.

Try other things as well, borax, baking soda, are examples. Just think about what you are doing because you can get into trouble mixing chemicals without considering how they react with each other. If you were to mix bleach and ammonia for instance you can produce chlorine gas and kill yourself – there are deaths every year from people cleaning homes overcome by this combination.

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