Jackson's

ETCHING ZINC WITH COPPER SULPHATE

BACKGROUND

Copper Sulphate as an etchant for zinc has been used for a long time. Some suggest Goya used it in his etching studio, but this cannot be verified! In the 1990's when much attention was being turned to toxicity in print studios, Cedric Green and Nik Semenoff utilised it as a safer alternative to nitric acid. Latterly Friedhard Kiekeben, inventor of the Edinburgh Etch, progressed it into the Saline Sulphate Etch (© F.K. 2002) for use on zinc, aluminium and steel.

Care should be taken to avoid contact with skin and eyes, protective clothing and goggles should be worn when mixing and decanting copper sulphate or when etching plates.

USING COPPER SULPHATE

Copper sulphate solution alone will etch zinc, albeit slowly and the solution will exhaust itself fairly quickly. The addition of sodium chloride (table salt) improves the performance and longevity of the etching solution.

SALINE SULPHITE ETCH (© F.K. 2002)

This recipe is a mixture of equal parts copper sulphate crystals to table salt, diluted in water. If your tap water is hard and contains lots of lime then boil and cool your water first.

75G	COPPER SULPHATE CRYSTALS
75G	TABLE SALT
1 LITRE	WATER

This is a fast etch and you will need to test your etching times before platemaking. The etch may attack some resists so this will need checking as well. In their book Intaglio - The Complete Safety-First System For Creative Printmaking, Robert Adam and Carol Robertson recommend a much gentler copper sulphate solution based on the work of Semenoff and Green.

500G	COPPER SULPHATE CRYSTALS
125G	TABLE SALT
10 LITRE	WATER

A coppery sediment is produced during the etching process. This can be periodically removed by skimming it off if it floats to the surface, or straining it out through some scrim or muslin. This will help prolong the life of the solution. The sediment should not be put down the sink, it can be dried and collected as dry chemical waste.

HEALTH AND SAFETY

Ensure appropriate protective clothing is worn to avoid contact with skin and eyes, a dust mask is recommended as copper sulphate dust can irritate if inhaled.

NEUTRALISATION AND DISPOSAL

When the solution is completely spent it will appear as a transparent liquid. It can then be neutralised with sodium carbonate (soda crystals) and once any fizzing stops, diluted with plenty of water and discarded. The solids left at the bottom can be dried and collected for disposal as dry chemical waste as per your local authority guidelines.

FURTHER READING AND RESOURCES

Non-Toxic Printmaking by Mark Graver / A&C Black

ISBN 9781408113257

Intaglio The Complete Safety-First System For Creative Printmaking By Robert Adam and Carol Robertson / Thames and Hudson

ISBN 9780500286616

www.nontoxicprint.com