Bracken Press printworkshop

Information sheet:- Hazards in Etching

Contact with acid is the main concern in etching, especially when preparing acid etching solutions. Concentrated acids are the most dangerous, protective clothing and goggles must be worn; PVC, neoprene rubber, latex neoprene or butyl gloves are all suitable for use with both concentrated and diluted acids (such as nitric), they do not give absolute protection and should be replaced frequently.

Fumes.

Acid fumes can be extremely dangerous if inhaled, good ventilation is required at all times. Inhaling the fumes can cause irritation to the lungs, impair breathing causing nitric acid poisoning, or pulmonary edema -a disease that leaves fluid on the lungs.

Burns.

ALL acid burns, contact with the skin should be avoided at ALL times. If contact is made with the skin wash immediately with clear water, cover the burn and seek medical attention.

Acids used in etching.

Nitric:- gives off nitrogen dioxide gas when etching zinc or copper plates, can cause bronchitis or emphysema from chronic exposure to small quantities.

Potassium Hydroxide:- A powerful alkali, irritation of eyes & lungs and can damage the nose. Can cause dermatitis.

Formaldehyde:-Is a sensitiser, emits highly irritating fumes especially when heated, avoid skin and eye contact.

Ferric Chloride:-Is an iron salt mixed with water to make an etching solution where it hydrolises to produce hydrochloric acid, which is irritating to the skin and eyes. Safer than Dutch Mordant.

Dutch Mordant:- Mixture of hydrochloric acid, potassium chlorate and water. Chlorine gas is given off, which is toxic and can cause irritation to the mucus membranes, eyes and lungs.

Other chemicals frequently used in etching.

Soft ball ground:-Can cause dermatitis and photosensitsation of the skin. Avoid skin and eye contact.

Liquid hard ground:- Contains gilsonite, can cause photosensitisation of the skin, irritant to skin and mucus membrane and depress central nervous system.

Turpentine:-Flammable, can depress the central nervous system and cause irritation. It is also suspected of causing kidney damage.

Methalated spirits:- Highly flammable, can be absorbed through the skin.

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Block Printing / Lino surface printing.

Sodium Hyroxide:- Caustic soda, highly corrosive can cause serious burns.
Turpentine:-Flammable, can depress the central nervous system and cause irritation. It is also suspected of causing kidney damage.

INKS

Printmaking inks are harmless but some do contain toxic metals, glycol ethers and other hazardous chemicals.

Metals present in inks.

Antimony Pigments:- Antimony orange, Naples Yellow
Arsenic:- Emerald green, Paris green, Cobalt, Violet.
Cadmium sulphide:- All cadmium pigments.
Chromium:- Green viridium, Chromium yellow.
Cobalt:- Cobalt violet, Cobalt yellow.
Lead compounds:- Flake white, Chrome yellow, Naples yellow, Umbers.
Manganese dioxide:- Umbers
Mercuric sulphide:- Cinnabar, Vermillion.
Molybdenum:- Orange.
Selenium:- Cadmium red.

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