

THE UNIVERSITY OF NORTH CAROLINA
GREENSBORO

College of Arts and Sciences
Department of Art

ENVIRONMENTAL HEALTH AND SAFETY POLICIES AND PROCEDURES
ETCHING AREA

Introduction

Regularly used materials that are of health and safety concern in the etching area include: Nitric Acid, Solvents, Rosin Powder, Hot Plate/Propane Torch, Inks, and Rags. From a campus computer, go online to read the Material Safety Data Sheets (MSDSs) for the chemicals we use: <http://www.uncg.edu/sft>

Nitric Acid

A solution bath of approximately 6 parts water to 1 part acid is used as an agent to etch the zinc plates. If this solution contacts the skin, use cold water from the sink adjacent the acid trays to flood that area of the skin. An eyewash station is also present and should be used to flush the eye(s) in the event of an acid splash: flush eyes for 15 minutes and seek medical attention.

Goggles and nitrile rubber gloves shall be worn when plates are immersed into, and lifted out of the acid trays. The trays must be covered when not in use, and uncovered while etching is taking place.

Only the instructor has access to the bottles of undiluted nitric acid solution, which are locked in a stainless steel cabinet. Only the instructor mixes fresh solutions in the acid trays.

Solvents

The two solvents used in the etching area are “paint thinner,” (mineral spirits) and denatured alcohol. Nitrile rubber gloves or a barrier skin cream should be worn when using these solvents, to avoid skin contact—latex rubber can cause an allergic reaction in some people. Rags or paper towels are not needed in this process. “Paint thinner” is used to remove grounds and resists from the etching plates. Solvents are never disposed of in the sink or waste containers, but remain in the sawdust bin used for cleaning plates. Denatured alcohol is used to remove rosin from the plates. Nitrile rubber gloves should be worn to avoid skin contact.

See “Painting Clean-up Procedures” for proper disposal instructions.

Rosin Powder

A respirator-type breathing mask should be worn when working with rosin powder, even though the powder is contained within the rosin box. An ordinary paper dust mask will not provide sufficient protection to susceptible people. From a campus computer, see the University Health and Safety Manual and its section on the Respiratory Protection Program, at: <http://www.uncg.edu/sft>

Hot Plate/Propane Torch

The hot plate thermostat should never exceed 150°F. The hot plate is used primarily for melting grounds onto the plates. Some vapor is produced, so it is recommended that a respirator-type breathing mask be worn.

The propane torch is used for melting rosin powder. The torch ignites with a trigger mechanism so matches or other sources of flame or spark are never required. Goggles should be worn when using the torch. The torch should always be turned off when finished, or when pausing during the rosin-melting process.

Inks

Inks used are oil-based etching inks. Nitrile rubber gloves or a barrier hand cream should be worn to avoid skin contact. Cleaning up is done with paint thinner in the sawdust bin, and unused ink scrapings must be disposed of in accordance with "Painting Clean-up Procedures."

Rags

Tarlatan cloth is used for wiping excess ink from the plates. After each cloth is too ink-saturated for continued use, it is disposed of in accordance with "Painting Clean-up Procedures."

For further reference, see:

<http://www.epa.gov> and <http://www.osha.gov>