

HAMILTON COLLEGE STUDIO ART DEPARTMENT
Environmental, Health and Safety (EH&S) Handbook
PRINTMAKING

Purpose:

To serve as a supplemental EH&S guide and reference for students.

General Responsibilities:

- Students—Understand and adhere to all safe work practices as communicated by faculty and staff, and as outlined in this document.
- Student Monitors—Understand safe work practices of the department and assist faculty and staff with implementation and oversight.
- Faculty and Staff—Train students and other staff to ensure compliance with all EH&S regulatory requirements.
- Materials Technician—Coordinate and act as liaison among EP&S Director, department faculty, and students to ensure compliance with EH&S obligations.
- Director of Environmental Protection & Safety—Oversee college EH&S requirements, conduct audits, maintain and update compliance documents and plans, train faculty and staff, collect and dispose of departmental waste, and assist with all other regulatory matters.

Students:

- Must be enrolled in a class in order to use the department's facilities and equipment.
- Must understand all terminology used in this handbook.
- Must understand safety and health hazards associated with chemicals (i.e. through MSDS's).
- Must use equipment and materials for their prescribed purposes only.
- Must know and understand the location and use of safety equipment, e.g. safety showers, emergency eyewashes, fire extinguishers, and emergency exits.
- Must immediately notify the appropriate authority of any unsafe practice or condition, e.g. faculty, Materials Technician, Custodian, student monitor, or campus safety. All chemical spills must immediately be cleaned and disposed of properly.
- Are responsible for cleaning and maintaining all workstation, countertops and sinks, and clearing and discarding all trash after each work session.
- Are responsible for maintaining clean, obstruction-free work areas and access to emergency equipment, exits, electrical equipment, and passageways. All aisle-ways must be kept free of chairs, boxes, equipment, and waste receptacles.
- Must not engage in horseplay, practical jokes or other behavior that might confuse, startle, or distract other students.
- Must wash hands frequently during work session, after contact with any hazardous materials, before eating, drinking or smoking, and before leaving the studio.
- Must not eat or drink in the studio.
- Must not pour any hazardous or solid waste down a sink drain or allow it to evaporate.

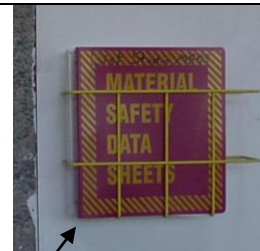
CHEMICAL HAZARD INFORMATION

Chemical Hazards

Academic printmaking studios typically contain a wide variety of chemical materials, each with different hazard properties:

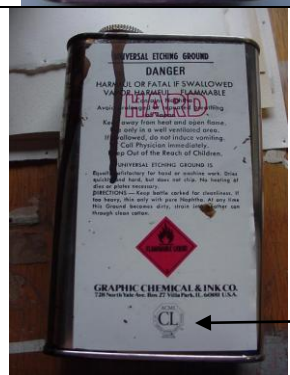
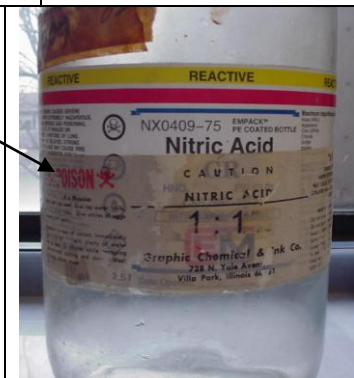
- Acids and other etching chemicals are corrosive (inhalation, ingestion, contact hazards).
- While many dry chemical products, like carborundum grit, are chemically inert, they may still be chronically hazardous to breathe (inhalation hazards).
- Lithographic and etching inks sometimes contain toxic metal pigments (ingestion, contact hazards).
- Combustible solvents/thinners (inhalation hazards).
- Flammable spray paints contain propellants (inhalation, ingestion, contact hazards).

While printmaking chemical labels and warnings should always be looked at and consulted, more important and thorough safety information can be obtained from MSDS sheets located within the studio (or through the Materials Technician or faculty members).



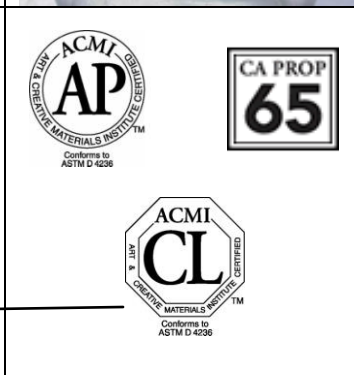
Original Manufacturer's Labels

Many chemicals in their original manufacturer's container have chemical hazard warnings on their labels, indicating the primary hazards associated with the chemical (i.e. flammable, corrosive, poison, etc.). The labels may include other safety information relevant to the chemical, and/or direct the user to the MSDS.



Labeling of Hazardous Art Materials Act (LHAMA)

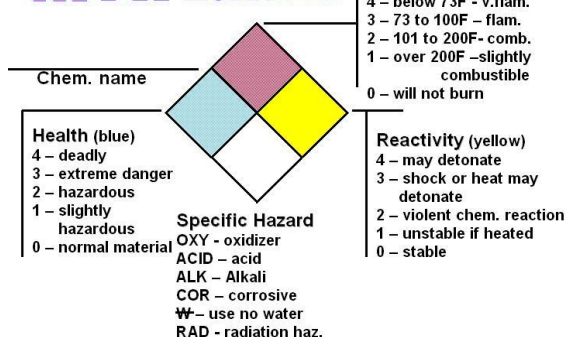
Many printmaking chemicals have additional chemical safety labeling under the LHAMA. Generally speaking, art materials with the AP seal are considered to be low hazard or non-toxic, while, art materials with the CL seal, or California Proposition 65 icon, are considered to have some hazardous properties or ingredients that necessitate additional safety precautions. See example to the left. You should consult the chemical's MSDS for additional safety information, as per the above.



OSHA HAZCOM Labeling & Info

Chemicals that are transferred to other secondary containers typically have an NFPA Hazcom label applied to them. These labels provide information in accordance with the image on the right.

NFPA Label



Other Printmaking Chemical Considerations

It is important to note that some chemical types in printmaking (such as the litho and etching inks made by Graphical Chemical & Ink Co.) do not have reliably informative safety warnings on their labels, and are sometimes confusing with both the AP and CL seals. As such, it is very important to consult the MSDS for such products for the appropriate chemical safety information.

ENGINEERING/VENTILATION CONTROL MEASURES

There are 3 ventilation systems in the printmaking areas that supplement the standard general dilution ventilation systems in List, designed to operate as follows:



Laboratory Style Ventilation Hood For Acids/Corrosives

The laboratory style ventilation hood in the printmaking corridor area is designed to capture fugitive acid vapors from the nitric or acetic acids typically used in the discipline. Acid vapors evolving from acid trays are captured from the working surface of the hood and exhausted to the outdoors. The optimum operating height of the sash when the hood is in use is 15", which ensures an air stream face velocity of 100 feet per minute. The on/off and lighting controls to the hood are on the right side of the device.

Working acid solutions must be used inside the ventilated hood space, as should any dispensing and collection activities. Hood users should avoid inserting anything other than one's hands inside the hood itself. The hood also should be regularly cleaned with soap and water to maintain the integrity of the equipment. Acid containers intended to be stored and reused should be placed in either of the 2 storage cabinets beneath the hood proper.



Overhead Canopy Hood In Printmaking Corridor Area

The canopy hood is designed to capture powdered rosin dusts from the aquatint box, as well as paint thinner and denatured alcohol vapors from either of the 2 trays used in the area, and exhaust them outdoors. The on/off timer and lighting controls to the hood are on the wall to left.

As the canopy hood is situated near the ceiling, vapors/dusts may travel through the breathing zone of one performing chemical tasks in this area. So it is critical for chemical users to limit their time in a position directly over the chemical trays, so as to allow the system to perform its work effectively.



Additional Ventilation In List 226 (Printmaking Studio A)

List 226 has an additional ventilation device to provide supplemental general dilution ventilation to the studio. The on/off switch is located near the sink, and when activated, provides negative ventilation to 2 intakes—one located near the sink, and the other near the ceiling. It is important to note that this system is only intended to supplement the building's normal ventilation system, like when the studio is fully occupied by a number of students in a class. As such, it is not really intended to capture chemical hazards introduced into the studio. The other ventilation equipment listed above should more appropriately be used for chemically related tasks.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

General Studio Attire Clothing should cover arms, legs, and torso. Wear close-toed shoes (no sandals, crocs).

Eye Protection

The use of solvents or powdered chemicals (like rosin or carborundum grit) requires safety glasses. The use, dispensing, or collection of corrosive acids requires the use of safety goggles.



Hand & Body Protection

The handling of solvents requires the use of nitrile gloves for hand protection. In addition to nitrile gloves, individuals who use, dispense or collect acids must also wear an acid splash apron.



Respiratory Protection

Use ventilation controls as your first, best way to minimize exposure to printmaking respiratory hazards. However, the voluntary use of an N-95 dustmask is acceptable as a safe work practice when dealing with low hazard or fugitive dusts on an intermittent basis.



PRINTMAKING PHYSICAL HAZARDS

Physical Hazards

There are 3 litho/etching presses (crush/pinch hazards) and 3 heating plates (thermal heat/electrical hazards) throughout the printmaking areas. Each of these devices must be used in accordance with the instructions/syllabi information provided by the faculty, in addition to the original manufacturer's safety instructions. Do not use this equipment unless properly trained and authorized by your faculty member or the Materials Technician.



ENVIRONMENTAL PROTECTION & COMPLIANCE (& OTHER CHEMICAL STORAGE ISSUES)

The Management of Printmaking Studio Wastes

Across the many chemicals routinely used in the printmaking areas, the following general strategies should be followed:

	Flammable/Combustible Liquids Spent flammable liquid wastes (paint thinner, denatured alcohol, etching ground, etc.) should be collected and consolidated into a safety can (left picture) and then stored on the bottom shelf of the flammable storage cabinet (right picture). Other flammable or combustible liquids (including aerosol paints) should be routinely stored on the upper 2 shelves of the flammable storage cabinet in the printmaking corridor area.		
		Other Flammable/Combustible Materials Rags or paper products contaminated with flammable/combustible solvents should be initially stored in the pop-up safety can (far left picture) and then transferred to a 5-gallon yellow hazardous waste bucket on a daily basis. The yellow hazardous waste bucket is also to be stored on the bottom shelf of the flammable storage cabinet as per the above. Additionally, spent aerosol paint cans that are not entirely used up should be similarly stored in a 5-gallon yellow hazardous waste bucket, and stored on the bottom shelf of the flammable storage cabinet.	
	Acidic/Corrosive Liquids Virgin or "in-use" acids should be regularly stored in either the cabinetry underneath the laboratory-style fume hood, or the small blue acid cabinet immediately adjacent to it. Once an acidic liquid is spent and must be disposed of, it should be relocated to the		
Misc./Other Waste Considerations Spent oil-based litho/etching inks may be comingled and disposed of within the 5-gallon yellow hazardous waste bucket associated with rag wastes above. All other chemical wastes generated in printmaking shall await a waste determination by the Director of Environmental Protection & Safety. It is also important to note that the sinks in printmaking are intended for "clean-up" only, and not chemical waste disposal.			

EMERGENCY EQUIPMENT—KNOW THE LOCATION OF THE FOLLOWING...

	Emergency Eyewash Equipment: Plumbed emergency eyewash stations (sink-mounted) are located on 3 of the 4 sinks within the printmaking areas. Emergency Shower: An emergency shower is located within the printmaking corridor area.	
	Chemical Spill Kits: • 2 spill kit types are located in List. • The larger acid and solvent spill kit (right) is located in the Materials Technician's office, and smaller spill buckets are located throughout List near flammable storage cabinets.	
First Aid Kit	A first aid kit is located in List 226 (Printmaking Studio A).	
Fire Extinguishers	Main hallways/exit corridors of List, and in all studios.	
	Fire Alarm Visual/Audible Enunciators & Pull Stations • There are 4 fire alarm enunciators and pull stations on the west side of List (all near building exits), by or within rooms 111, 114, 115b and 230. • In the event of a fire alarm signal, evacuate the building and proceed to your designated initial gathering point. • In the event of a fire or some other emergency warranting immediate Campus Safety notification (and in the absence of direct access to a phone), use the pull station to call Campus Safety to the scene.	
Emergency Phone #'s	<u>Campus Safety</u>—4000 (emergency line), 4141 (non-emergency line) <u>Physical Plant</u>—4500 <u>HCEMS</u>—4000 <u>Environmental Protection & Safety</u>—4647 <u>Materials Technician</u>—4827	

Printmaking Studio Use & Misc. Safety Considerations

- While studio art activities often require independent work, working alone or without supervision is generally discouraged. Further, studio art activities that utilize hazardous chemicals or dangerous equipment may be subject to other restrictions, as per the below.
- All List studios are open Mon-Fri 9 am to midnight, and Sat/Sun noon to midnight. Students are not to be in the building or studio areas outside of these time frames.
- The use of acid etching chemicals by students is permissible only under the direct supervision of the Materials Technician or their Professor.
- The Safety Agreement in attachment A below may be used by the Studio Art department to help facilitate a safe and environmentally friendly place of working and learning.
- Student studio monitors with additional supervisory roles for the art department, and who are compensated for their efforts, require additional training beyond the scope of this handbook.

ATTACHMENT A
PRINTMAKING STUDIO SAFETY AGREEMENT FOR STUDENTS

Hamilton College Student Safety Agreement Form

Hamilton College is committed to providing *all workshop/studio users* a safe environment in which to work and learn. Students must be well informed of the chemical and physical hazards associated with workshop/studio activities, and conform to the following rules established for the use of these facilities:

1. The use of any hazardous chemical material, or the use/operation of any equipment/machinery/power tool, must be approved by your instructor.
2. Unauthorized facility use, horseplay or pranks are strictly prohibited in the workshop/studio.
3. Report all injuries to your faculty member or instructor immediately. Any student injured in a workshop or studio must be seen by the Health Center.
4. Eating, drinking or smoking in a workshop or studio where chemicals are actively in use is strictly forbidden. Eating or drinking is acceptable in suitable non-chemical use or storage areas, or as specified by your instructor.
5. Everyone who uses a workshop or studio must know the locations of emergency equipment, such as fire extinguishers, fire blankets, eyewashes, showers, first aid kits, spill kits and telephones.
6. Wear the appropriate attire when working with chemicals or dangerous equipment in a workshop or studio. Wear the necessary Personal Protective Equipment as specified by your instructor, and do not wear loose clothing, dangling jewelry, or your hair in an unconfined manner when using equipment that may catch these loose items.
7. When using equipment, machinery or power tools, obey the instructions, Standard Operating Procedures, or manufacturer's recommendations/warnings governing their use at all times.
8. All hazardous chemical materials must be properly used, stored, labeled and disposed of.
9. Know the flammability, reactivity, health hazard and special hazards of any hazardous chemical material you must use. Report any signs or symptoms indicating a potential overexposure to a hazardous chemical to your instructor.
10. After using chemicals in the workshop/studio, always wash your hands prior to leaving, even after wearing protective gloves.
11. Dispose of hazardous chemical materials in a manner specified by your instructor. Do not use sinks to drain dispose of chemical materials. Sinks are only to be used for rinsing or other hygienic purposes. Do not dispose of any residual chemical waste materials unless you are certain that the waste stream may be discarded as trash/solid waste. Report all spills to your instructor immediately.
12. Maintain the areas you use in the workshop/studio in a tidy, neat, and well-kept manner. Since you individually are in the best position to know what chemicals or products are in use during certain workshop/studio activities, do not assume that others within your class, your instructor's, or college support staff will clean up messes they were not responsible for.

I, _____, have carefully read the workshop/studio safety agreement for Hamilton College and understand that these rules will be rigorously and impartially enforced. I also understand that willful and/or repeated violations of these safety rules will result in my being dismissed from the class.

Student Signature:

Date:

Class Name/Section & Instructor: