

HAMILTON COLLEGE THEATER DEPARTMENT

Theater Scene Shop Environmental, Health and Safety (EHS) Handbook

Purpose:

- To serve as a supplemental EHS reference guide for all employees and students within the KTSA Theater department Scene Shop (212).

General Facility Responsibilities:

- Students—Understand and adhere to all safe work practices as communicated by faculty and staff, and as outlined in this document.
- Restricted Students (monitors, seniors)—Understand safe work practices of the department and assist faculty and staff with implementation and shop oversight.
- Faculty—Train students and other staff to ensure compliance with all EHS regulatory requirements.
- Director of Technical Theater—Coordinate and act as the liaison between the EHS Director, department faculty, and students to ensure compliance with EHS obligations.
- Director of Environmental Protection & Safety—Oversee the college's EHS 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.

General Shop Use Guidelines for 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 all chemicals (i.e. through MSDS's or the like).
- Must use equipment and materials for their prescribed purposes only, and adhere to the following safety attire/other rules when using powered equipment:
 - No loose clothing (i.e., ties, scarves, loose sleeves, etc.).
 - No open-toed shoes/sandals, short shorts or mini-skirts.
 - All jewelry (i.e., rings, necklaces, bracelets, body piercings, or watches) must be removed or covered.
 - Long hair must be pulled back in a bun or otherwise tightly constrained. Long beards must also be constrained.
 - PPE in the form of safety glasses (at a minimum) is required for all personnel working in the studio, even if they are only a by-stander to ongoing work. Other PPE, such as dustmasks, ear plugs or facemasks, may also be required.
 - Cell phones shall not be used in the shop when work is ongoing, nor shall any equipment user be permitted to wear portable music devices with headphones.
- Must know and understand the location and use of safety equipment, e.g. emergency eyewashes/showers, emergency phones, emergency exits, spill kits and fire extinguishers. Note that fire extinguisher use requires additional training.
- Must immediately notify the appropriate authority of any unsafe practice or condition, e.g. faculty, Studio Operations Manager, Custodian, student monitor, EH&S or Campus Safety.
- Are responsible for cleaning and maintaining all workstations, countertops and sinks, and clearing/discarding of 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 sessions, after contact with any hazardous materials, before eating, drinking or smoking, and before leaving the shop.
- Must not eat or drink in the shop.
- Must not pour any hazardous waste down a sink drain or allow it to evaporate.

CHEMICAL HAZARD INFORMATION

GHS PICTOGRAMS



Original Manufacturer Container Labels & GHS Pictograms

Over the last several years, original manufacturer chemical containers have been phasing-in the labeling provisions of the new OSHA/GHS Hazcom standard. This new standardized label format will use the nine pictograms depicted to the left on both its chemical label and the Safety Data Sheet (SDS). It is important to note that original manufacturer chemical containers pre-dating this new standard may depict hazards through alternative means, like signal words (i.e. danger, warning), NFPA ratings, or words (i.e. flammable, corrosive, poison, etc.). See examples below.

CHEMICAL X

DANGER

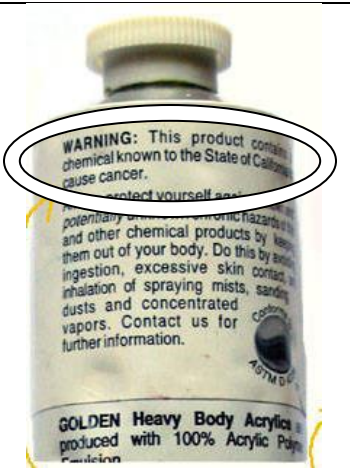
HAZARD STATEMENTS:
Fatal if swallowed.
Causes severe skin burns and eye damage.

PRECAUTIONARY STATEMENTS:

- Wear protective gloves.
- Wear face protection.
- Do not eat drink or smoke when using this product.
- Wash hands thoroughly after use.
- Store in a sealed container.
- **IF ON SKIN:** Rinse immediately with with cool water.
- **IF IN EYES:** Rinse thoroughly with water and seek medical attention.
- **IF SWALLOWED:** Do not induce vomiting. Seek medical attention.

Dispose of contents/container in accordance with local regulations.
Chemical X Manufacturing, 1234 Over There St., (123) 456-7890

See the S.D.S for more information.



Secondary Workplace Labeling

Chemicals dispensed into secondary containers must be labeled with a Hazcom label using the NFPA format depicted below, which convey safety information numerically.

Chemical Product Inventory & SDS's

All chemical products used in this studio must be inventoried on a departmental spreadsheet, and a SDS (safety data sheet) for each chemical must be maintained and made accessible. It is essential to be familiar with the SDS's for the products you use through training, and SDS's for new products introduced into the studio must be reviewed and assessed before introduction. Hamilton maintains a database of SDS's that can be accessed through MSDS-Online at this [LINK](#). Otherwise, the studio may also keep hard copy SDS's on hand for select high hazard or frequent use chemicals.

HEALTH HAZARD

4-Deadly
3-Extreme danger
2-Hazardous
1-Slightly hazardous
0-Normal material

FIRE HAZARD

Flash Points

4-Below 73 F
3-Below 100 F
2-Below 200 F
1-Above 200 F
0-Will not burn

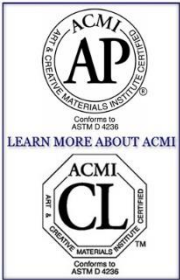
SPECIFIC HAZARD

Oxidizer OXY
Acid ACID
Alkali ALK
Corrosive COR
Use NO WATER W
Radiation Hazard ☢

INSTABILITY

4-May detonate
3-Shock and heat may detonate
2-Violent chemical change
1-Unstable if heated
0-Stable





Labeling of Hazardous Art Materials Act (LHAMA)

Many chemical materials in art/theatric disciplines also have chemical safety labeling that adheres to LHAMA and the Art & Creative Materials Institute (ACMI). Generally speaking, art chemicals with the AP seal are considered to be low hazard or non-toxic, while art chemicals with the Caution Label (CL) seal, or California Proposition (CA PROP) 65 icon, are considered to have some hazardous properties or ingredients that necessitate additional safety precautions. Alternatively, art chemical labeling may simply say “Conforms to ASTM D-4236”. This labeling is acceptable as a general screening tool only for hazardous properties. You should consult the chemical’s MSDS for additional safety information, as per the below.



PHYSICAL HAZARD INFORMATION

Stationary Power Tools & Equipment

The Scene Shop 212 contains a variety of equipment that represents both a physical hazard from the equipment itself, and/or additional health hazards from the materials they process. There are 11 major stationary power tools in this shop, each of which are maintained by the Director of Technical Theater. Each device must be rigorously managed and used to comply with all manufacturer specifications and OSHA stationary power tool requirements (to include machine guarding and PPE considerations). Standard Operating Procedures (SOP’s) have also been developed for all of these devices.

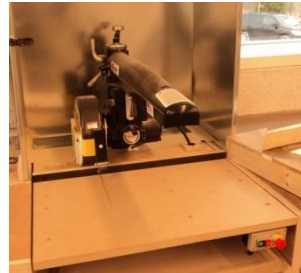
Table Saw



Compound Miter Saw



Radial Arm Saw



Planer/Jointer



Spindle Sander



Band Saw



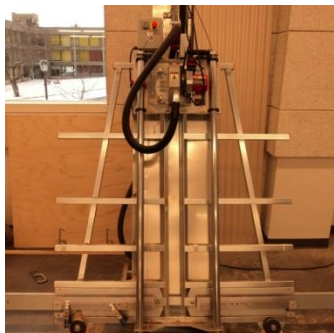
Drill Press



Belt/Disc Grinder



Panel Saw



Horizontal Band Saw



Bench Grinder



Stationary Power Tools/Equipment Access & LOTO Control Measures

All major stationary power tools/equipment in the Scene Shop are access controlled through plug lockouts, which the Director of Technical Theater controls. The Director of Technical Theater can also de-energize all electrical outlets in 212 by locking out the emergency power kill switch in his office (212A). In the event any individual piece of equipment is damaged and must be taken out of service, a full OSHA lockout/tagout (LOTO) must be implemented.

Plug Lockout



212A Emergency Power Kill Switch

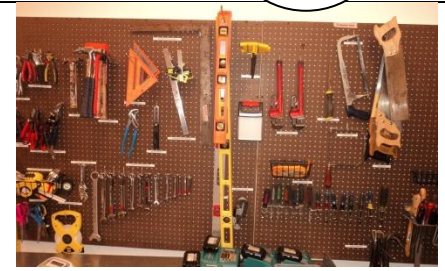


OSHA LOTO



Mobile Hand/Power Tools & Equipment

There are numerous mobile hand/power tools and equipment used in the Scene Shop, with a broad range of physical hazards, operating guidelines, electrical safety considerations and machine guarding requirements. While individual equipment-specific SOP's have not been developed for all devices, personnel must still be trained before device use, inspect their tools before/after use, and take damaged or deficient tools out of service if they fail an inspection. All mobile hand/power tools and equipment are stored in 212B.



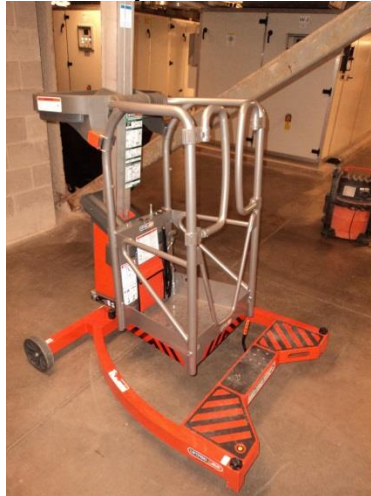
Specialized Equipment—Aerial Lifts & Forklift

Other specialized types of equipment are regularly made available to the Scene Shop. Given the significant safety hazards associated with these devices, their use by students requires both direct supervision by the Director of Technical Theater or other trained/qualified faculty, and conformance other College guidelines/SOP's as appropriate.

Genie 30' Aerial Lift



JLG Liftpod 14' Aerial Lift



Walk-Behind Forklift



ENGINEERING, VENTILATION & EMERGENCY EQUIPMENT CONTROL MEASURES

213C HEPA Dust Collection System



Stationary Power Tool Ventilation Controls

The major dust generating stationary power tools in the studio are equipped with local exhaust ventilation controls that convey dust directly to the HEPA dust collection system in the 213C adjacency. This ventilation system activates instantaneously upon power tool startup, with a 2-3 minute delay before powering down at the conclusion of power tool use. Since the HEPA dust collection system only captures very fine dust that are more hazardous to inhale, it is important for studio users to perform regularly housekeeping/vacuuming of larger dusts at each device following use.



Paint Spray Booth

The Scene Shop's paint spray booth enables personnel to perform paint spraying/drying activities in a well ventilated space. All spray painting activities within the spray booth must be documented in the provided log book, noting the date of the activity, and the quantity of spray paint utilized. The spray booth ventilation and lights may be turned on via buttons on the side of the device. See info below regarding the management of empty/near-empty paint spray cans.



Welding & Other Hot Work Activities

While the Scene Shop was designed to accommodate MIG welding and other hot work activities (soldering, grinding) from a ventilation perspective, such activities are particularly dangerous due to the nearby presence of combustible and/or flammable materials. Accordingly, the Director of Technical Theater is required to implement welding/hot work training as it relates to the conduct of such activities (including PPE), and conform to the College's Hot Work Program. As a part of this program, a pre-hot work check and hot work permit must be conducted in advance of any qualifying hot work, and must include designated fire watch. Further, direct supervision of such activities is required at all times. Welding/hot work should be positioned as close as possible to either of the 2 ventilation arms in the shop, and welding screens should be positioned around hot work as an isolation control to ensure other shop users are not exposed to welder's flash.

MIG Welder





Welding Ventilation













Welding Screens



<p>Emergency Controls The Scene Shop has a demarked “safety zone” that include a fire extinguisher, emergency eyewash, emergency phone, first aid kit, spill kit and an emergency power kill switch, which must remain accessible and sanitary at all times.</p>		
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PERSONAL PROTECTIVE EQUIPMENT (PPE)

General Studio Attire	As a general recommendation, personal clothing should cover the arms, legs and torso. Wear close-toed shoes (no sandals, crocs). When power tools are utilized, loose clothing (ties, scarves, sleeves) is prohibited, long hair must be constrained, and loose jewelry must be removed or covered.			
Eye/Face Protection	The use of equipment with flying debris hazards, and chemical solvents or other moderate hazard dry chemicals, requires safety glasses. If face/neck hazards also exist, use a faceshield plus safety glasses. For chemicals of higher toxicity or splash hazards, chemical splash goggles are required.			
Hand Protection	The routine handling of solvents or other chemicals with contact hazards require the use of nitrile gloves for hand protection.			
Hearing Protection	The use of any powered equipment for lengths of time that exceed 5 minutes requires the use of hearing protection. Ear muffs or ear plugs are both acceptable, as long as the listed noise reduction rating (NRR) on the device meets or exceeds 24. Note that nearby personnel working in a studio where others are using powered equipment with noise hazards may be impacted by noise hazards as well, and would also be required to wear hearing protection.			
Respiratory Protection	Use ventilation controls as your first, best way to minimize exposure to respiratory hazards in the Scene Shop. The voluntary use of an N-95 filtering facepiece (or dustmask) is acceptable as a safe work practice when dealing with low hazard or fugitive dusts on an intermittent basis.			
MIG Welding Protection	A welder’s helmet with appropriate shaded lenses (10-13 dependent upon amps and both gas/metal type) is required for eye and face protection (see LINK for more info). Leather long sleeve gloves and an apron are minimally required for all MIG welding activities for skin/body protection. It is also critically important to wear natural fiber clothing underneath PPE, such as cotton or wool (polyester or nylon materials are prohibited), such that no there is no exposed skin. Sturdy leather shoes are required for foot protection. If MIG welding activities are longer in duration or involve greater potential for spark/slag production, a welding jacket or coverall must be considered.		  	

ENVIRONMENTAL PROTECTION & COMPLIANCE

Scene Shop Waste Management

The Scene Shop uses many chemical materials, each of which are subject to a hazardous waste determination. Generally speaking, consider the following...

Chemical Container Rules

Chemical containers whose contents have been entirely used up and are empty may be disposed of as trash, as they are not regulated as hazardous waste. However, partially full chemical containers that contain substantial residual chemical materials (like cans of spray paint) must be collected because they **ARE** subject to hazardous waste determinations. Containers of common latex paint must be dried out or bulked with a drying agent (like sawdust or Portland cement) because flowable liquids cannot be disposed of as municipal solid waste. Following drying or bulking, latex paint containers can be disposed of in the trash



Sink Use & Disposal Rules

The sink in the Scene Shop conveys wastewater to the sanitary sewer for treatment and disposal. Sinks primarily provide for hand hygiene, and other tool washing/rinsing activities (even when what's being washed/rinsed was used with chemical materials). However it is never acceptable to dispose of chemical materials directly down the sink. Even if the chemical is not a regulated chemical material (like with dry plaster-of-paris), the addition of gritty material could both clog the drain and violate local sewer use ordinances.



Hazardous Waste Generation/Satellite Accumulation Areas

Satellite Accumulation Areas (SAA's) are the designated location at or near the point where hazardous wastes are routinely generated and stored. Hazardous waste containers must be marked with a hazardous waste label that clearly indicates the contents. The date on the label should only be filled out by the Director of EHS upon container pick up. The flammable storage cabinet and 5-gallon bucket inside a secondary containment spill pallet underneath the paint spray boot is the designated SAA for the Scene Shop, primarily for aerosol spray paint can wastes.



OTHER FIRE SAFETY & EMERGENCY PREPAREDNESS CONSIDERATIONS

Emergency Equipment

The Studio Operations Manager is responsible for ensuring that all emergency equipment specified above is accessible and sanitary at all times through routine inspection. Additional emergency spill response equipment is maintained by the Director of EHS in KTSA, for deployment as needed.

Fire Safety

All who work or study in KTSA should be familiar with the fire safety plan for the building, which can be found at this [LINK](#). This plan identifies the locations of emergency equipment located outside of studios (pull stations, fire extinguishers), egress paths, and fire safety system descriptions. In the event of a fire alarm signal (including the activation of the clear fire strobe to the right), evacuate the building and proceed to your designated muster point (**KJ circle**). In the event the amber alert signal (strobe to the left) is activated locally by a Building Coordinator, shelter in place and await further instruction.



Emergency Phone #'s

Campus Safety—4000 (emergency line), 4141 (non-emergency line)
Physical Plant—4500
HCEMS—4000
Environmental Protection & Safety—4647
Director of Technical Theater—4869

STUDIO ACCESS, SECURITY & USE GUIDELINES

Studio Access

KTSA is generally accessible to the entire College community between the hours of 8:00 am and midnight, by way of its main entrance doors being unlocked. Between the hours of midnight and 8:00 am, KTSA main entrance doors will be controlled via the Card Access system, whereby only employees who regularly reside in the building and certain authorized students must use their Hill Card to gain access to the facility. Student access during controlled hours will be limited to those actively enrolled in classes, and based upon studio use criteria established below.
























Studio/Shop Security

All studio/shop spaces where chemical, physical or environmental hazards are used and/or stored (as identified via a hazard sign) shall be secured against unauthorized access, so as to prevent theft, releases/spills, sabotage or security breaches. The principal strategy to achieve this requirement is closed and locked/controlled studio/shop doors. The only time studio/shop doors should be open/ajar or unlocked is when a class is actively in session, or when it can be directly supervised by department personnel outside of class sessions.



Theater Scene Shop (KTSA 212)

Chemical Hazards			Welding Hazards	
Irritants 	Comp. Gases 	Flammables 	Hot Surfaces 	MIG Welding 
Physical/Equipment Hazards			PPE Controls	
Flying Debris/Noise 	Hazardous Dusts 	Crush Hazards 	     	
Nip Points 	Entanglement 	Cuts/Lacerations 		
Engineering & Administrative Control Measures				
No Food/Drink 	LOTO 	Ventilation & Spray Booth 	Training 	
Emergency Contact Information • Campus Safety: x4000 • Theater Technical Director: x4869 • Environmental Protection & Safety: x4647			Access, Security & Use Level 4/Restricted Hazard Space Studio is to be locked when unoccupied. Only trained students or employees are authorized to use the space.	

Studio/Shop Use

The Scene Shop (212) is designated as a **Level 4/Restricted Hazard Space**, as per the hazard sign depicted to the left. Student use of the shop and all materials contained therein is restricted to those enrolled in classes, or as authorized by department faculty/staff. Direct supervision by faculty or staff is required for all authorized studio users.

ATTACHMENT A
HAMILTON COLLEGE SHOP SAFETY AGREEMENT FOR STUDENTS

Hamilton College is committed to providing *all shop users* a safe environment in which to work and learn. Students must be well informed of the chemical and physical hazards associated with all shop 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 shop.
3. Report all injuries to your faculty member or instructor immediately. Any student injured in the shop must be seen by the Health Center. Shop supervisors must complete an accident report for all injuries no matter how minor.
4. Eating, drinking or smoking in a shop 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 this shop must know the locations of emergency equipment, such as fire extinguishers, eyewashes, showers, first aid kits, spill kits and telephones.
6. Wear the appropriate attire when working with chemicals or dangerous equipment in the shop. Wear the necessary Personal Protective Equipment (PPE) 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 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 your work areas 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 shop activities, do not assume that others within your class, your instructors, or college support staff will clean up messes they were not responsible for.

I, _____, have carefully read the shop 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 shop privileges being revoked.

Student Signature:

Date:

Class Name/Section & Instructor: