SoAD Ceramics at the New York State College of Ceramics at Alfred University
Studio Protocol Orientation for safe handling of ceramic materials in the studios, the Raw Material Lab, Glaze Lab, and the Grinding Room.

Compiled for the Fall Semester of 2023

# Our Health

With reasonable caution and good studio hygiene, all of the raw materials supplied by the Grinding Room and the Raw Material Lab can be handled safely. The goal is simple**: avoid consuming or inhaling any of our raw materials**. If you will be using chemicals which are not supplied or stocked in inventory, please seek consultation through James Tingey in the Grinding Room – tingey@alfred.edu

Avoid consuming ceramic materials.

1) Don't eat in the labs. Wash your hands well before eating or touching your face.

2) Do not reuse food containers in the studio.

Avoid inhaling ceramic materials.

1) In the wet state, class glazes and clays can be considered safe to work with because the risk of airborne dust is mitigated by moisture. Care should be taken to clean trimmings/ shavings and other damp debris while the material is still wet – especially debris that is on the floor where it will dry and be tracked through the studio, potentially becoming airborne.

2) Wear a university approved respirator in the labs and in the proximity of any dust that is being generated.

3) Take caution when working with dry materials to minimize the amount of dust you generate and to ensure the safety of yourself and anyone near you.

4) Clean up dry messes with plenty of water and a damp sponge. Rinse the sponge regularly. It is good practice to have a bucket of clean water and a sponge prepared and available while working in the labs.

5) Wetting and using a squeegee is considered best practice for cleaning floors – a mop or the wet vac can be used to pick up the water from the floor. If sweeping is necessary, be sure to use plenty of sweeping compound to control dust. Sweeping in long, slow strokes will also help to limit airborne particulate.

*** FLAMMABLE CHEMICALS: Oil or solvent based materials must be stored in a Flammable Cabinet. This includes oil based paints and solvents such as mineral spirits, alcohol, or acetone. Latex or water based paint is not flammable and should not be stored in the Flammable Cabinets.

Propane torches must be dismantled when not in use and the tanks must be stored in a Flammable Cabinet.

More on Respirable Hazards

In the SoAD Ceramic Art labs and studios we use a variety of chemicals as raw materials for our clays and glazes. These chemicals, or raw materials, come to us in powdered form. Most of these raw materials originate as minerals that are processed and ground or otherwise sorted into fine powders (e.g. clay, feldspar, silica). Other chemicals are manufactured from mineral sources and also ground to fine powders. (e.g. frits, metallic oxides, or glaze stains).

Every Chemical has unique hazard statements that can be found on their respective SDS sheets.

For your personal safety it is important that you remember that it is not healthy to consume or inhale any of the raw materials available through the SoAD Ceramic Art Labs.

Silica is a primary ingredient of many, if not most, clay and glaze recipes. We stock the Grinding Room and Raw Material Lab with a product called Silc-o-sil which is manufactured by processing quartz to a fine powder. Silica, Quartz, and Flint are forms of crystalline silicon dioxide or crystalline silica. Crystalline Silica is also present in many of the raw materials that we stock in the lab. Though all of the mineral powders that we stock should be considered unhealthy to breathe, Silica is the perfect model of a course particle that can be just the right size to build up in the tissue of our lungs over a lifetime, causing damage and reducing the capacity of our lungs.

> In most of our materials, a percentage of the present silica particles are small enough that they can become invisibly suspended in the air. These respirable particles can be drawn into your respiratory system, causing damage and increasing the likeliness of infection and disease. Of those particles which become suspended, a small percentage are small enough to find their way to the deepest recesses of your lungs where they can become permanently entrapped in tissue and promote scarring which reduces lung capacity through pulmonary fibrosis (silicosis in this case) and lung cancer.

# Our Community

The Raw Materials Lab, Grinding Room, Glaze Lab and Plaster Labs are shared work spaces. As a community members with access to these facilities you are assuming the responsibility to utilize these spaces with respect for the staff, faculty, and other students. The following guidelines will help to ensure that the studio remains safe for everyone to use.

1) Work in a manner that minimizes risk to yourself AND others. Minimize the generation of dust, be sure to wear the appropriate safety attire, and be aware of individuals in your proximity that might be put at risk by your actions.

2) Label all of your mixtures properly and handle your own waste stream in accordance with the SoAD Ceramics Lab Protocol. Labels are provided for you and can be picked up in Raw Materials Lab or Grinding Room.

3) Materials in the Raw Material Lab are primarily for glazes and decorative slips. Materials for clay bodies and casting slips should be paid for through the Grinding Room. Test batches of clays and casting slips can be prepared from materials in the Raw Materials Lab. Tests should be conducted with the least possible material to ensure that we are making economical use of our resources and to further control our waste stream. (ex. glazes: 100-300gms clay bodies 500-2000gm)

4) Clean up after yourself. Wipe the counters down. Wash any lab tools that were used and return them to the rack to dry. Orient freshly cleaned tools so that water doesn't pool and they can dry for the next person to use. Leave the space cleaner than you found it.

5) Keep tools in the Labs they are assigned. Return tools and materials to their assigned storage. Tools that are labeled for an individual lab must remain in that Lab. (ex. Plastic scoops from Raw materials lab should not be used in Kiln Room)

5) Equipment such as the spray booth, ball mills, and Shar mixer must be cleaned at the end of every use. Seek assistance if a faculty member or technician has not instructed you personally on safe use of equipment. Be sure to clean equipment and the surrounding area at the end of every use.

7) Do not store anything in the labs – if you need to leave your project for a short period of time (hours, not days), place it somewhere out of the way and leave a note with your contact information and when you will return. Items may be discarded if they are not labelled properly.

# Clay and Throwing Water Reclamation: managing our non-hazardous waste stream

Reclamation Troughs can be found throughout the studio. We attempt to recycle and reuse as much clay as we can. Clay that has entered into the reclaim troughs is available to anyone who would like to reclaim it, otherwise GR Staff will prepare Mold Clay using this material.

There are 2 different types and the goal of each is separate:

1) Clay Reclamation Troughs: These are the most common. The goal is to make use of clay scraps that would otherwise be in our waste stream. Use these bins to dispose of clean clay that is not contaminated with anything (unfired, no plaster, no plastic, no wood, no trash, no bisque, no fired clay). The material in these bins is usually processed by students in the Grinding Room to make Mold Clay which is available through the Grinding Room for $6 a bag. Mold Clay is not intended to be fired because it is occasionally contaminated with things like bat pins, sponges, or other pottery tools. Since Mold Clay is a blend of all of our studio clays, it often has desirable fired characteristics **but is highly variable material and each batch is different – it is the purchaser's responsibility to test it.** Also, the material in the Clay Reclamation Troughs is free for the taking.

2) The second kind is a Throwing Water Reclamation Trough. This trough is designed to reduce sediment in the sink traps near wheel throwing class spaces. The first difference is that the lid has a steel mesh. This is so that throwing water can be poured through the lid. This trough should be limited to throwing water that is free of chunks. Chunks or clay waste that is "yogurt thick" or thicker should go into the other troughs. **Please keep the screen clear** and do not force clay through the screen or leave debris on top of the lid. **Everyone is responsible for decanting clear water from this trough to avoid slip hazards from an overflowing trough**

***There is significantly less labor involved in processing dry clay waste. Whenever possible, dry your clay waste and add it to the Clay Reclamation Bins. ****

# Our Environment

Some of the materials found in the Grinding Room and the Raw Material Lab can be hazardous to the environment if they are not properly disposed of. Other materials are detrimental to the local water treatment facility. It is our responsibility to control the studio waste stream in a way that addresses these hazards.

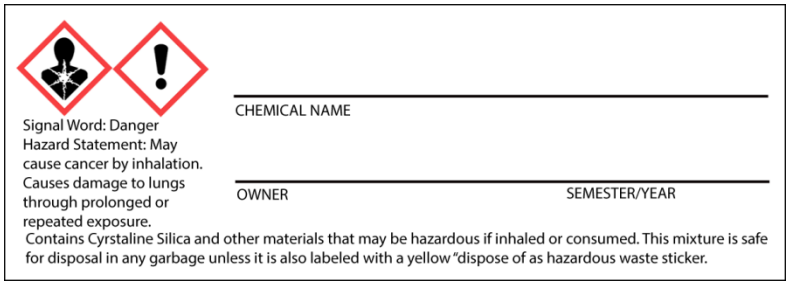
1) Label mixtures in a manner consistent with the SoAD Ceramics Lab Protocol. Labels are provided for your use in the Raw Materials lab and the Grinding Room.

2) Use a sink that is appropriately equipped for the material you are handling and avoid putting anything except clean water down the sink drains. Scrape containers and tools before rinsing them in the sink.

3) Dispose of materials in accordance with the SoAD Ceramics Disposal Protocol. Avoid generating waste by mixing only what you intend to use. Hazardous Waste should be disposed of in Hazardous Waste drums and Non Hazardous materials should be dried out and disposed of in the garbage.

## SoAD Ceramics Lab Protocol for Labeling and Disposal

In the Raw Materials Lab you will find labels with warning statements that apply to ceramic powder mixtures. Please fill this label out clearly and affix it to the container (not the lid). This label should go on every container of slip, glaze, etc. that is made in the Raw Materials Lab. Mixtures made in Raw Material lab and Grinding Room are only for use in labs and studios associated with SoAD Ceramic Art at the New York State College of Ceramics. Here is an example of the label:




Please note that the label above includes a hazard statement associated with the risk of breathing mineral dust, particularly crystalline silica. As clays and glazes dry, the risk of generating dust which may become airborne is greatly increased. Also note that the label indicates the contents are 'safe for disposal in any garbage unless it is also labeled with a yellow "DISPOSE OF AS HAZARDOUS WASTE" sticker.'

Raw materials from the Raw Material Lab or Grinding Room that contain elements regulated by the EPA as hazardous waste are labeled with this sticker. You will use a “DISPOSE OF AS HAZARDOUS WASTE” sticker if your mixture contains any raw material that is marked as hazardous waste. If you procure raw materials from another source, please have them reviewed by the Grinding Room and appropriately labeled.


Hazardous Waste disposal drums can be found in Satellite Accumulation Areas (SAA). The primary drums can be found in the Glaze Lab and Raw Material Lab, additionally Senior and Grad Studios have Hazardous Waste disposal drums, use whatever drum is most convenient and not full. Proper use of these disposal areas includes scraping the hazardous contents of your container into the bin followed by rinsing the container in a properly equipped sink. Do not place glaze containers, bags or other trash in the Hazardous Waste Drums. These drums are explicitly for disposing of unfired ceramic materials and mixtures.

## Sinks

Sinks are not for disposal of materials, they are for cleaning, NO DUMPING. Avoid putting anything other than clean water down any of the sinks. Excessive mineral debris will cause the sinks to back up and to potentially overflow, and organic material will cause the traps to develop an intolerable odor. The sinks in the studios are equipped with traps that are designed to catch particulate before it flows into the sewage line. These are not 100% effective, but they are our best tool in protecting the local water treatment facilities. Individuals employed by the university manually pump the sink traps out. It is critical that we manage the amount of debris that goes into the sinks both to protect the local water treatment facilities and to maintain a clean and functioning studio.

There are 2 types of sinks in the studios: GREEN SINKS, and HAZARDOUS WASTE SINKS (also known as “YELLOW SINKS” – each are clearly marked.

1) GREEN SINKS have a green sign and are safe for rinsing nonhazardous materials only. Examples of nonhazardous materials include clay and some slips or glazes (providing they don’t contain any of the raw materials considered hazardous waste).The debris in the traps on GREEN SINKS remains safe for normal disposal in the dumpster. It is critical that these traps do not become contaminated with anything that the EPA considers hazardous waste. ***DO NOT DUMP ANYTHING OR FORCE MATERIAL DOWN THE DRAIN – REMOVE DEBRIS FROM GREEN SINKS AND PUT IT IN THE GARBAGE***

2) HAZARDOUS WASTE SINKS are labeled yellow and can be used to rinse tools or containers used in the preparation of materials that contain Hazardous Waste. The traps on Hazardous waste sinks have to be handled and disposed of as hazardous waste which is quite costly and labor intensive. ***DO NOT DUMP ANYTHING OR FORCE MATERIAL DOWN THE DRAIN – REMOVE DEBRIS FROM HAZARDOUS WASTE SINKS AND PUT IT IN THE HAZARDOUS WASTE DRUM***

Each time a Hazardous Waste sink trap is pumped out, or a Hazardous Waste Drum is disposed of, it costs the studio up to $750. This equates to thousands of dollars every year that could otherwise be used to benefit the program. Through considerate studio practices we can reduce this number substantially and we will all benefit from a cleaner and healthier studio.

## Right to Know

Right to Know is the legal principle that individuals have the "right to know" what chemicals they may be exposed to in their workplace or community. All of the raw material storage in the Raw Material Lab and the Grinding Room has been updated to the modern standard for hazard labeling as of 2016. This labeling will give you a summary of the hazard of each material. Here is an example of the label format we use:


This system is referred to as the Global Harmonized System or GHS. The GHS outlines specific structure and phrasing to Safety Data Sheets (formerly MSDS). Section 2 of any GHS compliant SDS sheet will outline the hazards and advise precautions that should be taken with the chemical.

SDS sheets for chemicals found in the Raw Materials Lab and the Grinding Room are available to you through:

**http://www.alfredgrindingroom.com/msds-sheets/**

# What Makes a Material Hazardous Waste?

Some of the materials that we use contain elements that are considered Hazardous Waste by the Environmental Protection Agency (EPA). Of the regulated elements we encounter 4 of them:

1) Lead 2) Barium 3) Cadmium 4) Chrome

A glaze mixture which contains any of these materials must be appropriately labeled and handled as Hazardous Waste. Materials deemed as Hazardous Waste are also an increased hazard to individuals and the community, additional care should be taken to avoid exposure.

Lead Frits are available through the Grinding Room. Lead Frits can only be utilized at the recommendation of your professor, and with special consultation with Raw Materials Technicians and enhanced handling protocols will be followed.

Additional notes on lead:

Raw lead materials are not allowed in the DoCA studios or labs (white lead, red lead, litharge, etc.).

Glazed containing Lead are not to be fired in reduction kilns.

Glazes containing Lead are not to be sprayed

Glazes containing Lead are not to be fired over ^5

Barium Carbonate is available in the Raw Materials Lab. Special caution should be taken with Barium Carbonate and glazes which contain it. It is the most common ingredient that will render a batch of glaze Hazardous Waste. When utilized in a clay body to limit efflorescence of undesirable salts, the absolute minimum effective amount should be utilized – often 0.25% to 0.5% Clays with this minimum amount of Barium are handled are normal waste.

Cadmium is found primarily in red and orange glaze stains which are only available for purchase in the Grinding Room. They are widely regarded as safe when fired but there is research suggesting that the pigments are slightly soluble in water.

Chrome is available in the Raw Material Labs, and is found in the following forms Chrome Oxide and Iron Chromate.

All of the materials or mixtures with the label “DISPOSE OF AS HAZARDOUS WASTE” contain one or more of these elements. The Grinding Room carries these products in forms that lessen the risk to community members – providing measures are taken to insure that the materials is not consumed or inhaled. However, these chemicals remain an environmental liability and it is required that they are handled in accordance with federal, state, and local laws.

If the material container contains the “DISPOSE OF AS HAZARDOUS WASTE” your mixtures must also bear this label.