



Clayworks Safety Issues

Clayworks Safety Issues

Ceramic artists are at risk for pulmonary disease, heavy metal poisoning, and other toxic reactions caused by exposure to clays, glazes, and kiln emissions. Stringent personal hygiene, awareness of hazardous materials, and appropriate safety measures will reduce the health risks of repeated exposures.

General

- Do not eat or drink in your work space.
- Do not interchange tools and eating utensils.
- Scrub hands thoroughly after working.
- Prevent back strain and wrist injuries with good work habits.
- Know what materials you are using.
- If you can't find information about a material, assume it is hazardous.
- Know that some individuals are more sensitive to materials than others.

Clay

- Inhaling clay materials (especially silica) can permanently damage your lungs. Working with premixed clay is safer than mixing your own from dry material.
- Wear plastic or vinyl aprons rather than porous cloth.
- Be sure you know what ingredients are in the clay you use.
- Avoid using hazardous materials to colour your clay.
- Wet clay can develop mold and bacterial growth.

Dust

- Wear a well-fitting HEPA filter mask when mixing clay or cleaning the studio.
- Clear the work area before clay scraps can dry out. Never sweep.
- Ensure good fresh air exchange in your work area.
- Work wet whenever possible.

Fumes

- Firing clay in a kiln produces carbon monoxide, formaldehyde and sulphur dioxide. Firing glaze materials can produce a wide variety of toxic fumes.
- Use a mask for vapors and gases when working with lustre glazes.
- Spray glazes only in a properly constructed, vented and filtered spray booth.
- Make sure that the exhaust of the spray booth is vented so that it does not pollute somebody else's breathing air.
- Used spray booth filters for certain glazes may have to be treated as toxic waste



Clayworks Safety Issues

Glaze

- Many glaze compounds are hazardous. Of special concern are: Crystalline silica, antimony, cadmium chrome, lead, cobalt chloride cobalt sulphate, iron chromate, iron sulphate, manganese dioxide, nickel, uranium and vanadium. Lustre glazes contain toxic materials.
- Avoid use of these materials whenever possible but if you do use them, take care to avoid ingesting or inhaling and having skin contact.

Physical damage

- Lifting bags of clay can cause back injury. Take care lifting heavy materials or equipment.
- Long periods on a potter's wheel can encourage carpal tunnel syndrome and can cause back and neck injuries.
- Adjust wheel, bench and wedging board heights to allow you work with your back straight.
- Vary your daily routine to avoid stressful repetitive motions.

Kilns

- Kilns are potentially hazardous if they are installed or fired incorrectly. Kilns should be installed and wired to fire codes.\
- Never reach into an electric kiln unless all of the switches are turned off.
- When the power relay becomes old, the relay may allow electricity to pass through even when the kiln is off.
- The intense heat and infrared radiation from all kiln firings can damage your eyes. Wear welders goggles when looking in the kiln spy holes.

Toxic Hazards

- Carbon monoxide is formed when compounds containing carbon are burned in a limited oxygen environment. This happens with most clay, many glaze materials, wax resists and other organic additives in clays and glazes.
- Organic decomposition chemicals are created when organic material burns to create formaldehyde.
- Sulphur oxides are released when clay or glaze contains sulphur. The sulphur oxide fumes can form sulphur acid when combined with water. They will etch the metal kilns parts and are highly damaging to your respiratory system.
- Chlorine & fluorine are release when fluorine and chlorine containing clay and glaze materials such as fluorspar, iron chloride and cryolite are fired.
- Metal fumes are formed when some metals and metal-containing compounds are fired. Some toxic metals which commonly fumes include lead, cadmium, antimony, selenium, copper, chrome and nickel. The fumes may be inhaled or they may settle on surfaces in the studio. Some fumes can contaminate the kiln and deposit on ware in subsequent firings.
- Nitrogen oxides and ozone gases are produced by decomposition of nitrogen-containing compounds or by the effect of heat and/or electricity on air in the kiln. They are strong lung irritants.