STUDIO TIPS

Safety in the Kiln-Glass Studio

General Considerations

Good housekeeping and common sense go a long way toward ensuring safety in the kilnforming studio. Ventilate your studio well, keep dust to a minimum, and confine hazardous materials to a limited area.

Avoid eating and drinking in the studio. Toxins and dusts are easily ingested when you handle food and kilnworking materials in the same space.

Wash your hands upon leaving the studio. If you can't change clothes, wear a smock or apron while you work. To avoid tracking dusts and toxins to other locations, consider dedicating a pair of shoes to studio use only.

Remember that your physical condition and lifestyle choices can be factors when working with certain hazardous materials. For example, smoking has been proven to increase the rate at which many toxins are ingested. Pregnant women, children under twelve years of age, and people taking certain forms of medication may have increased susceptibility to some chemicals.

The table on the following page covers hazards specific to kilnforming glass.

Safe Kiln Use

Thoroughly read the manual and other information provided by the manufacturer.

Operate your kiln in a well-ventilated area. Full-fuse firings of glass on primed shelves will not release fumes, but firings that involve fibers, enamels, glazes, and other materials can.

Avoid burns by wearing protective clothing. Use heat-resistant gloves whenever opening a hot kiln.

Always turn off the power before reaching into a hot kiln (for example, during glass combing or other manual forming).

Protect your eyes. Looking into a hot kiln for prolonged periods of time exposes your eyes to potentially damaging infrared light. Excessive exposure can cause cataracts. Wear safety glasses with protective ANSI shade 1.7 lenses. Didymium glasses used for flameworking DO NOT provide protection from infrared light.

Basic Safety Equipment

- **Safety glasses:** Make sure they have side shields.
- **Respirator:** NIOSH-approved for specific process: fume, vapor, or dust- trapping.
- **Heat-resistant gloves:** Non-asbestos Zetex or Kevlar.
- **Lightweight cotton gloves:** These protect skin from irritating dusts or fibers.
- **Bandages:** Cuts are almost inevitable when handling glass. However, they are usually clean and rarely serious.

Safety Resources

- **Bullseye Glass Community on Facebook**
  Post questions about safety on our forum. It's a great way to tap into the advice of Bullseye technicians and experienced artists and craftspeople working in their own studios: facebook.com/groups/BullseyeGlassCommunity/
- **Glass Artist Health & Safety**
  A helpful webpage with information on safety for artists working in glass. Compiled by Greg Rawls, an artist, industrial hygienist, and certified safety professional: gregorieglass.com/health-safety/
- **(MSDS) Material Safety Data Sheets**
  These are available online or from the product suppliers or manufacturers. They are particularly important when using a material that is either new or unfamiliar to you.
- **(NIOSH) National Institute of Occupational Safety and Health** cdc.gov/niosh/index.html
- Your local safety supply store may be able to provide assistance in the proper fit of safety gear and additional advice on personal protective equipment, apparel, first aid supplies, and environmental protection.

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Material	Hazard	Precaution
Sheet Glass, Cullet & Billets	**A)** Cuts during scoring and breaking. **B)** Chips in the eyes during scoring and breaking. **C)** Dust and powder created during grinding. This may irritate the eyes, skin, and respiratory system. If glass is ground extremely fine, the hazard depends on the solubility of any toxic metals it contains.	**A)** Gloves provide some protection against cuts but often hamper dexterity. Glass cuts are generally clean. Flush with hydrogen peroxide and bandage. Wear gauntlets when handling sheets over eight square feet. **B)** Always wear eye protection. Safety glasses should have side shields. Goggles are recommended during grinding. **C)** Use water when grinding or polishing to keep tools and glass cool and to keep dust down. Clean up ground glass slag while it is still wet to prevent it from becoming airborne. When dealing with dry glass dust and powder, wear a NIOSH-approved respirator and replace the filter cartridge regularly. Use local ventilation.
Glass Frit & Powder	See notes above on dust and powder. Be cautious with frit from lead-bearing glass, as it may be both irritating and toxic.	When working with dry glass powder, always wear a NIOSH-approved respirator and replace the filter cartridge regularly. Use local ventilation.
Shelf Primer & Kiln Wash	Silica dust. Inhaling can cause respiratory irritation. Long-term exposure may cause silicosis.	Wear a NIOSH-approved respirator when mixing dry powder or scraping fired shelves clean. Use local ventilation.
Ceramic Fiber Products	Fibers can irritate eyes, skin, and respiratory system, particularly when cut or torn. After firing, fiber products readily release dusts that may be dangerous to breathe.	Avoid contact with skin. Wear a respirator designed to filter particulates. Clean residual fibers from glass with running water. Dispose of used materials in a sealed plastic bag.
ThinFire & Shelf Paper	When fired, disintegrates into a dusty tissue that can irritate eyes, skin, and respiratory system.	See precautions above for ceramic fiber products. Avoid breathing residual dust. Vacuum kiln using a High Efficiency Particulate Air (HEPA) filter vacuum, or remove dust by saturating it with water and collecting in a plastic bag.
Wax	Overheated and burning wax produces acrolein and aldehydes, which are respiratory irritants and suspected human carcinogens.	Avoid overheating wax. No respirator filters out all of the hazardous components present in wax vapors. Steam wax out of molds rather than burning it out.
Plaster	Skin, eye, and respiratory irritant. Contains mild alkalis and can produce burns.	Wear safety goggles and a NIOSH-approved respirator while mixing investment or divesting molds and use local ventilation. Wear gloves and/or use a protective cream on hands.
Silica	Irritates respiratory system. Long-term exposure may cause silicosis.	Wear a NIOSH-approved particulate respirator and use local ventilation.
Talc	Respiratory irritant. Dusts may irritate the eyes.	Wear safety goggles and a NIOSH-approved respirator and use local ventilation.
Enamels	May contain heavy metals.	Wear protective gloves. Do not wash down drain. Consult MSDS for further information.