

nontoxicprint

Health in the Arts

LASER-CUTTING-SAFETY 3D PRINTING

Emergency Equipment



In Chicago, most safety equipment can be bought at a safety supply house such as SOS First Aid and Safety Supply. A safe workspace should have the following equipment easily accessible:

Fire Extinguishers Fires are still the leading cause of injuries and deaths in homes and workspaces. Fire extinguishers should be easily accessible to each workstation where flammable materials or equipment are used or stored.

Fire Extinguishers

Select extinguishers based on the type of fire hazards likely to occur in your space. Using the wrong extinguisher can actually spread the fire and/or endanger the user.

The U.S. National Fire Protection Association (NFPA) classifies fires into four general categories:

- Class A fires involve ordinary materials such as burning paper, lumber, cardboard, and most plastics.
- Class B fires involve flammable or combustible liquids such as gasoline, kerosene, grease, oil and common organic solvents used in the studio.
- Class C fires involve electrical equipment such as appliances, switches, panel boxes, power tools, hot plates and certain kilns. Water is usually a dangerous extinguishing medium for Class C fires because of the risk of electrical shock.
- Class D fires involve combustible metals, such as magnesium (found in some pigments), titanium (used in some pigments, jewelry and metal coating), potassium and sodium (also pyrophoric organometallic reagents such as alkyl lithiums, Grignard agents and diethylzinc). Handle these fires with extreme care! These materials burn at high temperatures and will react violently with water, air, and/or other chemicals. Be sure to consult with fire professionals about appropriate precautions and emergency actions for these fires.

The most common types of extinguishers available include:

- **Water Extinguishers:** Also known as APW extinguishers (air-pressurized water), these are suitable for Class A fires only. Never use these extinguishers on grease fires, as they might spread the fire rather than extinguish it. Water extinguishers should not be used on Class D fires, because the burning material might react violently with water. In addition, water extinguishers should not be used on electrical fires because of the risk of electrical shock.
- **Carbon Dioxide Extinguishers (CO₂):** Suitable for Class B and C fires and/or a combination of fire types. They contain CO₂ gas that is highly pressurized and when applied, it works by depriving the fire of oxygen. Carbon Dioxide extinguishers have an advantage over chemical extinguishers because they do not leave behind a residue on the extinguished materials.
- **Dry Chemical Extinguishers:** Usually suitable for Class A, B and C fires and/or a combination of fire types. They are filled with a chemical foam or powder that is pressurized with nitrogen, and leave a non-flammable substance on the extinguished materials (CO₂ extinguishers do not). Dry chemical extinguishers come in two common forms.
 - **ABC Extinguisher:** A multi-purpose extinguisher filled with mono-ammonium phosphate, a yellow powder that leaves a sticky residue (which may be damaging to electrical supplies).
 - **BC Extinguisher:** Filled with sodium bicarbonate or potassium bicarbonate, and leaves a slightly corrosive residue.

Your space might present the potential for a variety of fires. Be sure that the appropriate precautions and extinguishers are available for each application. In some cases, you might need to investigate extinguishers created for specialized uses.

- More information on fire prevention by the National Fire Protection Association Website.
- More information about fire extinguishers.

Combustible Storage

Oily rags, paint rags, oily waste, solvents and similar materials subject to spontaneous combustion should be kept in approved waste cans and emptied regularly. Small amounts of solvents or solvent-containing materials (less than a pint) can be evaporated if other and better alternatives are not available. Evaporation should take place either outdoors or inside a local exhaust hood where no one will be exposed to the solvent vapors. Combustible materials should always be stored away from exits and equipment using heat or flames.

Sprinkler SystemSprinkler systems were once expensive and unusual in small art studios. However, new systems, using flexible tubing that tie directly into the space's water supply, have made sprinkler systems more affordable and easy to maintain. If your work involves a lot of combustible materials, heat or fire sources, seriously consider installing a sprinkler system.

Emergency Alarms, Smoke and Carbon Monoxide Detectors

All tenants should be able to detect emergency alarms at all times and locations. Special systems should be installed for occupants with hearing or visual impairments. Smoke detectors should be installed throughout the space, particularly near areas where flammable materials are used or stored. Install carbon monoxide detectors if the heating system is old or consistently turned up to provide additional heat and ventilation. CO2 detectors should also be near all portable gas space heaters, as well as combustion-generating equipment such as welders.

Emergency Eyewash and Shower

Most studios must have a way to irrigate the eyes with clean, cool water for at least 15 minutes after a hazardous material (liquid or solid) has come into contact with the eye. In many cases, it is also important to have instant access to shower or wash facilities for chemicals spilled on the skin. Portable eye wash kits can be purchased for first aid needs, but any facility with eye or skin hazards should have at least a sink with flowing water that can be accessed in an emergency by a victim with limited or no vision.

First Aid Supplies and Training

First aid kits should only contain materials to aid injured persons until they can be transported for emergency care. These kits should be large enough to accommodate the number of users in the space, and should only include items such as clean bandage material large enough for compression of bleeding, tourniquets and other materials that tenants have been trained to use. Inappropriate use of tourniquets and other first aid materials can be harmful. Small bandages and other supplies needed for routine minor injuries should be stored in a separate area so that the first aid kit remains fully stocked for emergencies.

The American Red Cross regularly offers first aid courses. Build first aid kits that are specifically suited to the types of injuries that could occur in the space: i.e., chemical burns from acids, serious lacerations from saws, etc..

Poisonings and Toxic EmergenciesContact information for the Illinois Poison Center (888-221-2222), a physician, emergency room, fire and police departments should be prominently displayed on the outside of the first aid kit and near each phone.

