



Safety Gram

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Fire Safety

The Do's and Don'ts During the Events of a Fire

Do's

- **Do not panic**, follow instructions and use commons sense in a state of emergency
- **Encountering a fire.** You are not required to fight a fire, but fire extinguishers should be available for use. Do not fight the fire if it is not small or easily extinguishable. Do not let the fire get between you and your exit. Keep an exit at your back at all times. Stay low where the air is fresher and cooler.
- **If fire occurs in fume hood.** Do not remove burning items from fume hood. Attempt to extinguish fire by covering/smothering it, with a fire extinguisher, or fire blanket.
- **Evacuate the building.** Immediately on hearing the alarm, drop all work and exit the building. If at all possible, turn off Bunsen burners, hot plates, etc. and close doors to labs.
- **Gather.** All labs and offices should identify a location to meet in the event of a fire. Then one individual will report to the Incident Reporter.

Don'ts

- **Go back**, to your lab or office to grab items or check others, just leave the building and go to your designated area.
- **Stay in your area**, don't assume that the alarm is a drill, treat all alarms as if they are real.

Types of Fires:

Fire professionals have established four different categories or classes of fire according to the type of materials that is burning.

- **Class A fires** involve ordinary combustible solids such as paper, wood, cloth, plastics, rubber, and cardboard. (**A**sh)
- **Class B fires** involve flammable or combustible liquids and gases such as gasoline, kerosene, alcohols, common organic solvents, and hydrogen gas. (**B**oils)
- **Class C fires** involve energized (plugged-in) electrical equipment such as hot plates, stirrers, lights, oven, electrical switches, and appliances. (**C**urrent)
- **Class D fires** involve combustible metals which include water-reactive metals such as sodium, lithium, and potassium and flammable metals such as magnesium.

Instructors. You are responsible for ensuring all students have evacuated and have gathered at the pre-decided location. **DO NOT** return to lab where students are working if you are in your office. Just evacuate. Report to Incident Reporter.

How to Use a Fire Extinguisher

Learn how and when to use a fire extinguisher before fighting a real fire. Annual science department safety training should include putting out a controlled fire with a handheld fire extinguisher. To fight a fire, remember the word, PASS.

Pull the pin. Most fire extinguishers have a simple metal pin that prevents the fire extinguisher from accidentally being discharged. This pin is usually held on with a small plastic tie. Firmly grasp the pin loop and pull to remove the pin.

Aim. Always aim low, at the base or front of the fire – the edge of the fire closest to you. This will allow the extinguishing material to flow over the fire and smother it. If you aim at the middle of the fire or the back of the fire, much of your extinguishing material will be wasted and the fire may be pushed closer to you.

Squeeze the handle. This releases the extinguishing agent. Short bursts are much better than one long continuous squeeze. A little bit of extinguishing agent goes a long way. Always keep the fire extinguisher upright.

Sweep. Sweep the fire extinguisher from side to side at the base of the fire. Better yet, apply short bursts of the fire extinguishing material to each outer front edge of the fire.

Move towards the fire, but always make sure an exit is easily accessible.

Adapted from Flinn Scientific, Inc., *Safety Fax*, "Fire Safety Basics"

If someone cannot use the stairs, help get them to the nearest stairwell, and then report this individual and location to fire fighters responding. The stairwells are designed to be a place for first responders to come to. More accidents occur trying to assist versus getting professionals to help remove the individual.

The Science of Fire

Fires need three components (commonly referred to as the fire triangle) to start and to continue – fuel, oxygen, and heat.

Removing or disrupting one of the points of the triangle will prevent or extinguish a fire. For most fires, it is not the flammable liquid or solid that is burning, but rather the vapors from the material that are mixing with air and burning. Removing heat will reduce the amount of vapors (fuel) and extinguish the fire. Smothering the fire will reduce the amount of oxygen available and extinguish the fire.

