

# Monthly Safety Bulletin

## Be Prepared for Training September 18th Fire Safety

Four things must be present at the same time in order to produce fire:

1. Enough **oxygen** to sustain combustion,
2. Enough **heat** to raise the material to its ignition temperature,
3. Some sort of **fuel** or combustible material, and  
The **chemical, exothermic reaction** that is fire.

Oxygen, heat, and fuel are frequently referred to as the "fire triangle." Add in the fourth element, the chemical reaction, and you actually have a fire "tetrahedron." The important thing to remember is: **take any of these four things away, and you will not have a fire or the fire will be extinguished.**

**Essentially, fire extinguishers put out fire by taking away one or more elements of the fire triangle/tetrahedron.**

**Fire safety**, at its most basic, is based upon the principle of keeping fuel



### **Class A - Wood, paper, cloth, trash, plastics**

Solid combustible materials that are not metals. (Class **A** fires generally leave an **Ash**.)



### **Class B - Flammable liquids: gasoline, oil, grease, acetone**

Any non-metal in a liquid state, on fire. This classification also includes flammable gases. (Class **B** fires generally involve materials that **Boil** or **Bubble**.)



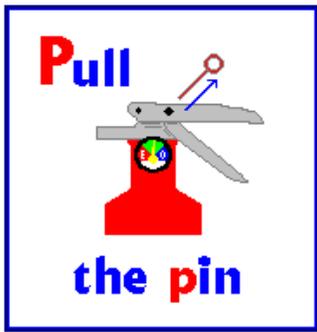
### **Class C - Electrical: energized electrical equipment**

As long as it's "plugged in," it would be considered a class **C** fire. (Class **C** fires generally deal with electrical **Current**.)



### **Class D - Metals: potassium, sodium, aluminum, magnesium**

Unless you work in a laboratory or in an industry that uses these materials, it is unlikely you'll have to deal with a Class **D** fire. It takes special extinguishing agents (Metal-X, foam) to fight such a fire.



**Pull the pin.**  
This will allow you to discharge the extinguisher.



**Aim at the base of the fire.**  
If you aim at the flames (which is frequently the temptation), the extinguishing agent will fly right through and do no good. You want to hit the fuel.



**Squeeze the top handle or lever.**  
This depresses a button that releases the pressurized extinguishing agent in the extinguisher.



**Sweep from side to side** until the fire is completely out. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

Fires can be very dangerous and you should always be certain that you will not endanger yourself or others when attempting to put out a fire. For this reason, when a fire is discovered:

- Assist any person in immediate danger to safety, if it can be accomplished without risk to yourself.
- Activate the building fire alarm system or notify the fire department by dialing 911 (or designating someone else to notify them for you). When you activate the building fire alarm system, it will automatically notify the fire department and get help on the way. It will also sound the building alarms to notify other occupants, and it will shut down the air handling units to prevent the spread of smoke throughout the building.
- Only after having done these two things, if the fire is small, you may attempt to use an extinguisher to put it out.

**However, before deciding to fight the fire, keep these rules in mind:**

**Know what is burning.** If you don't know what is burning, you don't know what type of extinguisher to use. Even if you have an ABC extinguisher, there may be something in the fire that is going to explode or produce highly toxic smoke. Chances are, you *will* know what's burning, or at least have a pretty good idea, but if you don't, let the fire department handle it.

**The fire is spreading rapidly beyond the spot where it started.** The time to use an extinguisher is in the incipient, or beginning, stages of a fire. If the fire is already spreading quickly, it is best to simply evacuate the building, closing doors and windows behind you as you leave.

**Do Not Fight the Fire If:**

**You don't have adequate or appropriate equipment.** If you don't have the correct type or large enough extinguisher, it is best not to try to fight the fire.

**You might inhale toxic smoke.** If the fire is producing large amounts of smoke that you would have to breathe in order to fight it, it is best not to try. Any sort of combustion will produce some amount of carbon monoxide, but when synthetic materials such as the nylon in carpeting or foam padding in a sofa burn, they can produce highly toxic gases such as hydrogen cyanide, acrolein, and ammonia in addition to carbon monoxide. These gases can be fatal in very small amounts.

**Your instincts tell you not to.** If you are uncomfortable with the situation for any reason, just let the fire department do their job.

**The final rule is to always position yourself with an exit or means of escape at your back before you attempt to use an extinguisher to put out a fire.** In case the extinguisher malfunctions, or something unexpected happens, you need to be able to get out quickly, and you don't want to become trapped. Just remember, **always keep an exit at your back.**