**Fire Safety**

**Requirements for Combustion**

In order for a fire to exist, three factors must be present. If any one of the factors is removed or suppressed, the fire will go out. These three factors make up a fire triangle.



* Fuel In order to have a fire, there must be something to burn.
* Oxygen Oxygen is the part of the air which is necessary for anything to

burn. Many fire extinguishers work by removing this factor from a fire, thereby smothering the fire.

* Heat The heat required to start a fire is also referred to as the “kindling

temperature”. In order for a substance to start burning, heat energy is required. Once the fire has started, it usually produces enough energy by itself to maintain the fire. Substances with a high kindling temperature require sustained heating before they will start to burn, such as coal. Substances with a low kindling temperature ignite very easily, such as gasoline.

**Classes of Fire**

There are four main classes of fires; these classes are based on the type of fuel used. Fire extinguishers are labeled based on the class of fire that they can be used on. For example, a Class A fire extinguisher can only be used on a Class A fire, never on a Class C fire.

* **Class A** **Ordinary Combustible Fires**
	+ Most common type of fire
	+ Fuel is materials such as wood, paper or textiles
	+ Water type extinguisher used to lower the amount of heat present
	+ Class B and C type extinguishers will also work to put out Class A fires
* **Class B Flammable Liquid Fires**
	+ Fuels such as gasoline, grease, oil or paint
	+ Dry chemical or foam type fire extinguishers used to smother the fire by removing the oxygen
	+ Never use a Class A fire extinguisher as most liquid fuels will float on top of the water and spread the fire to a larger area
* **Class C Electrical Fires**
	+ Any fire that involves a piece of electrical equipment and where electricity is present
	+ Carbon dioxide or dry chemical fire extinguishers used to smother the fire by removing the oxygen
	+ Never use a Class A fire extinguisher because water conducts electricity
	+ Never use a Class B fire extinguisher because the foam type contains water
* **Class D Combustible Metal Fires**
	+ Fires involving magnesium, aluminum, zinc, zirconium, lithium, potassium or metal hydrides
	+ Dry powder fire extinguisher (soda-ash, sodium chloride granules and graphite powder, copper powder)

**Fire Extinguishers**

Fire extinguishers can be purchased as either single class type extinguishers, or more commonly as a multi-class (ABC) type extinguisher. There is no multi-class type extinguisher that includes Class D.