CLASSIFICATIONS OF FIRE

Fires are divided into four classes. Each class has special characteristics and therefore requires different methods of extinguishment. It is very important to use the correct extinguishing method on each class of fire, failure to do so could result in serious personal injury or even death.

CLASS A - Ordinary combustibles or fibrous material, such as wood, paper, cloth, rubber and some plastics.

PREVENTION:

- Keep storage and working areas free of trash.
- Place oily rags in covered containers.

EXTINGUISHMENT:

- Extinguish ordinary combustibles by cooling the material below its ignition temperature and soaking the fibers to prevent re-ignition.
- Use pressurized water, foam or multi-purpose *(ABC-rated)* dry chemical extinguishers. DO NOT USE carbon dioxide or ordinary
(BC-rated)
dry chemical extinguishers on Class A fires.

CLASS B - Flammable or combustible liquids such as gasoline, kerosene, paint, paint thinners and propane.

PREVENTION:

- Don't refuel gasoline-powered equipment in a confined space, especially in the presence of an open flame such as a furnace or water heater.
- Don't refuel gasoline-powered equipment while it's hot.
- Keep flammable liquids stored in tightly closed, self closing, spill-proof containers.
- Pour from storage drums only what you'll need.

- Store flammable liquids away from spark-producing sources. Use flammable liquids only in well-ventilated areas.

EXTINGUISHMENT:

- Extinguish flammable liquids, greases or gases by removing the oxygen, preventing the vapors from reaching the ignition source or inhibiting the chemical chain reaction.
- Foam, carbon dioxide, ordinary (BC-rated) dry chemical, multi-purpose dry chemical, and halon extinguishers may be used to fight Class B fires.

CLASS C - Energized electrical equipment, such as appliances, switches, panel boxes and power tools.

PREVENTION:

- Look for old wiring, worn insulation and broken electrical fittings.
- Report any hazardous conditions to a responsible person.
- Prevent motors from overheating by keeping them clean and in good working order. A spark from a rough-running motor can ignite the oil and dust in it.
- Utility lights should always have some type of wire guard over them. Heat from an uncovered light bulb can easily ignite ordinary combustibles.
- Don't misuse fuses. Never install a fuse rated higher than specified for the circuit.
- Investigate any appliance or electrical equipment that smells strange. Unusual odors can be the first sign of fire.
- Don't overload wall outlets. Two outlets should have no more than two plugs.

EXTINGUISHMENT:

- Extinguish energized electrical equipment by using an extinguishing agent that is not capable of conducting electrical currents.
- Carbon dioxide, ordinary *(BC-rated)* dry chemical, multi-purpose dry chemical and halon fire extinguishers may be used to fight Class C fires.
- DO NOT USE water extinguishers on energized electrical equipment.

CLASS D - Certain combustible metals, such as magnesium, titanium, potassium, and sodium. These metals burn at high temperatures and give off sufficient oxygen to support combustion. They may react violently with water or other chemicals, and must be handled with care.

PREVENTION:

- Flammable metals such as magnesium and titanium generally take a very hot heat source to ignite, however, once ignited are difficult to extinguish as the burning reaction produces sufficient oxygen to support combustion, even under water.
- In some cases covering the burning metal with sand can help contain the heat and sparks from the reaction.
- Class D extinguishing agents are available *(generally as a dry powder in a bucket or box)* which can be quite effective, but these agents are rare and often expensive.
- If you are planning to have contact with flammable metals you should consider purchasing a five or ten pound container of Class D extinguishing agent as a precaution.
- Pure metals such as potassium and sodium react violently *(even explosively)* with water and some other chemicals, and must be handled with care. Generally these metals are stored in sealed containers in a non-reactive fluid to prevent decay from contact with moisture in the air.
- White phospherous is air-reactive and will burn/explode on contact with room air. It must be kept in a sealed container with a non-reactive solution to prevent contact with air.

EXTINGUISHMENT:

- Extinguish combustible metals such as magnesium, titanium, potassium and sodium with dry powder extinguishing agents specially designated for the material involved. In most cases, they absorb the heat from the material, cooling it below its ignition temperature.