YOUR SAFETY Department
SAFETY Solutions

PORTABLE FIRE EXTINGUISHERS

All worksites should have fire extinguishers immediately available and accessible. Employees must be trained to use fire extinguishers, know when to get out and evacuation procedures.

HOW THEY WORK

Fire extinguishers function similarly to an aerosol paint or hairspray can. Compressed material stored within the extinguisher pushes the substance out of the extinguisher through the hose and nozzle.

CLASSIFICATIONS OF FIRE

Classification of types of fires and types of portable fire extinguishers include:

- **CLASS A** fires involve ordinary materials such as paper, cloth wood, cardboard, foam, and other rubbish and debris. Class A material will leave ash as it is consumed by the fire; remember A for Ash.
  - Use a Class A or Class ABC fire extinguisher.
- **CLASS B** fires involve flammable and combustible liquids such as fuels, paints, solvents, and grease. Liquids need to be carried in a container such as a bucket; remember B for Bucket.
  - Use a Class B or Class ABC fire extinguisher.
  - Do not use a Class A extinguisher on this type of fire as it may allow the flames to spread.
- **CLASS C** fires are electrical fires. Electricity requires conduction of current; remember C for Current.
  - Use a Class C or Class ABC fire extinguisher.
  - Do not use a Class A fire extinguisher. You must disconnect the power source to eliminate these types of fires.

FOR ENQUIRIES:

YOUR SAFETY DEPARTMENT, LLC

P + 1 888 859 5653
info@yoursafetydept.com
www.yoursafetydept.com

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- **CLASS D** fires involve flammable metals such as magnesium, potassium, and other flammable metals. Special extinguishing agents must be utilized to extinguish these types of fires. Most metals are dense; remember D for Dense.

  - Class A, Class B, or Class C fire extinguishers are not designed to extinguish these types of fires.
  - Class ABC fire extinguishers are designed to be used on all classes of fires except Class D fires.
  - Class BC fire extinguishers are designed to be used on flammable liquid and electrical fires only.

- **CLASS K** fires involve vegetable oils, animal oils, or fats in cooking appliances. This is common for commercial kitchens, including those found in restaurants, cafeterias, and caterers; remember K for Kitchen.

  - Use a Class K fire extinguisher.

TYPES OF FIRE EXTINGUISHERS

- **WATER EXTINGUISHERS** are suitable for class A fires, but not for class B, C and D fires such as burning liquids, electrical fires or reactive metal fires. In these cases, the flames will be spread or the hazard made greater! Water extinguishers are effective on pool chemicals provided that they are correctly stored away from electrical hazards and equipment.

Water mist extinguishers are ideal for Class A fires where a potential Class C hazard exists. Unlike an ordinary water extinguisher, the misting nozzle provides safety from electric shock and reduces scattering of burning materials.

- **DRY CHEMICAL EXTINGUISHERS** are useful for either class ABC or class BC fires (check the label) and are your best all around choice for common fire situations.

They have an advantage over CO_2 and "clean agent" extinguishers in that they leave a blanket of non-flammable material on the extinguished material which reduces the likelihood of reigniting. They also make a terrible mess - but if the choice is a fire or a mess, take the mess!

Note that there are two kinds of dry chemical extinguishers:

- Type BC fire extinguishers contain sodium or potassium bicarbonate.
- Type ABC fire extinguishers contain ammonium phosphate.

- **CARBON DIOXIDE (CO_2) EXTINGUISHERS** are for class B and C fires. They don't work very well on class A fires because the material usually reignites. CO_2 extinguishers are not approved for class D fires!

CO_2 extinguishers have an advantage over dry chemical in that they leave behind no harmful residue. That makes carbon dioxide a good choice for an electrical fire involving a computer or other delicate instrument.

Note that CO_2 is a bad choice for flammable metal fires such as Grignard reagents, alkyllithiums and sodium metal because CO_2 reacts with these materials.

- **METAL/SAND EXTINGUISHERS** are for flammable metals (class D fires) and work by simply smothering the fire. The most common extinguishing agent in this class is sodium chloride, but there are a variety of other options. You should have an approved class D unit if you are working with flammable metals.

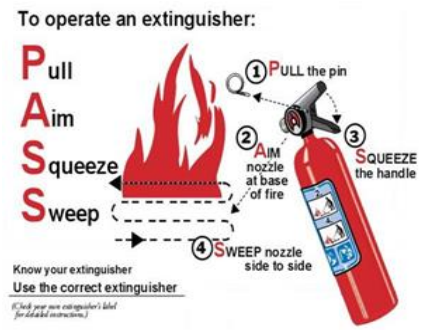
- **HALOTRON I EXTINGUISHERS,** like CO_2 units, are "clean agents" that leave no residue after discharge. Halotron I is less damaging to the Earth's ozone layer than Halon 1211 (which was banned by international agreements starting in 1994).

This "clean agent" discharges as a liquid, has high visibility during dischage, does not cause thermal or static shock, leaves no residue and is non-conducting. These properties make it ideal for computer rooms, clean rooms, telecommunications equipment, and electronics.

FE-36^{TM} (Hydrofluorocarbon-236fa or HFC-236fa) is another "clean agent" replacement for Halon 1211. The FE-36 agent is less toxic than both Halon 1211 and Halotron I. In addition, FE-36 has zero ozone-depleting potential.Stress and the distractions that come with it can influence driving, too.

OPERATING FIRE EXTINGUISHERS

Do not attempt to extinguish a fire if you are not trained and/or authorized to do so. When attempting to extinguish a fire utilizing a fire extinguisher, utilize the **PASS** method of operating fire extinguishers.



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Portable fire extinguishers are an important part of an overall fire safety program. It is important to keep in mind that the successful use of portable fire extinguishers depends on the following:

- The portable fire extinguishers are properly located and in working order.
- The portable fire extinguishers are of the correct type.
- The fire is discovered while still small enough for use of the portable fire extinguishers to be effective.
- The fire is discovered by persons who are ready, willing, and able to use the portable fire extinguishers.

CARE AND MAINTENANCE

Maintenance is a thorough examination of the fire extinguisher. It is intended to give maximum assurance that a portable fire extinguisher will operate effectively and safely. It includes a detailed examination, including any necessary repair or replacement. Maintenance will normally reveal if hydrostatic testing or internal maintenance is required.

Maintenance and recharging are considered "servicing". Recharging is the replacement of the extinguishing agent. It may also include the replacement of the pressurizing gas (expellant gas) for certain types of fire extinguishers. At least once a month (more often in severe environments) you should inspect your extinguisher. Ensure that:

- The extinguisher is not blocked by equipment, coats or other objects that could interfere with access in an emergency.
- The pressure is at the recommended level. On extinguishers equipped with a gauge, the needle should be in the green zone - not too high and not too low.
- The nozzle or other parts are not obstructed.
- The pin and tamper seal (if it has one) are intact.
- There are no dents, leaks, rust, chemical deposits and other signs of abuse/wear. Wipe off any corrosive chemicals, oil, gunk etc. that may have landed on the extinguisher.
- Fire extinguishers should be pressure tested (a process called hydrostatic testing) after a number of years to ensure that the cylinder is safe to use. Consult your owner's manual, extinguisher label or the manufacturer to see when yours may need such testing.

If the extinguisher is damaged or needs recharging, get it replaced immediately! Recharge all extinguishers immediately after use regardless of how much they were used.

You can perform the monthly “quick-check” inspections yourself, but a certified portable fire extinguisher servicing company must come in at least once a year and perform any maintenance, recharging, and/or testing that is required by local, regional, and federal regulations.

CONCLUSION

Employees trained in using fire extinguishers must assess the situation before taking action.

- Know what type of fire you are dealing with and which type of fire extinguisher is most appropriate to use
- Remember the **PASS** method for operating fire extinguishers
- Always leave yourself a way out; keep your back towards the exit.
- Do not attempt to fight a large fire; instead immediately report the incident to your local fire department.

THOUGHT OF THE MONTH: SAFETY CAN DISTINGUISH YOU. LACK OF SAFETY CAN EXTINGUISH YOU.

MINUTES OF MEETING

Date:_____**Person Conducting Meeting:**_____

Topic:_____

Branch: _____**Division:**_____

Attendees:

NAME	INITIAL	DATE

NAME	INITIAL	DATE

Additional Items Discussed:

_____

_____

Problem Areas or Concerns:

_____

_____

Comments:

_____

_____

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