PORTABLE FIRE EXTINGUISHERS
Arkansas Workers' Compensation Commission/Health and Safety Division
1-800-622-4472

GOALS
This handout is designed to provide an overview of portable fire extinguishers that are used in most industries.

INTRODUCTION

The Occupational Safety and Health Administration's (OSHA's) 29 CFR 1910.157, Portable Fire Extinguishers Standard, is the regulation that requires employers to train their employees in the use of portable fire extinguishers to extinguish small, i.e. incipient stage, fires in the workplace. The National Fire Protection Association (NFPA) 10, Standard For Portable Fire Extinguishers, provides additional information regarding hazard classification, placement of fire extinguishers, and extinguisher capacity.

DEFINITIONS

Class A fire - a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.

Class B fire - a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

Class C fire - a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media. Never use water to extinguish an electrical fire!

Class D fire - a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

Dry chemical - an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

Dry Powder - a compound used to extinguish or control Class D fires.

Extinguisher classification - means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

Extinguisher rating - means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

Flame resistance - the property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

1-fire extinguishers
Halotron 1 - a rapidly evaporating liquid (hydrochlorofluorocarbon) that removes heat from the combustion zone by displacing the oxygen. Electronically non-conductive units that will not cause thermal or static shock to sensitive electrical equipment. Recommended for use in computer rooms, data storage areas and laboratories.

Incipient stage fire - a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

Inspection - a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.

Maintenance - the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fittings, devices and agent supplies.

Multipurpose dry chemical - a dry chemical which is approved for use on Class A, Class B and Class C fires.

GENERAL REQUIREMENTS

Portable fire extinguishers must be provided, mounted, located and identified so that they are readily accessible to employees without subjecting employees to possible injury. Fire extinguishers should not be located behind doors, boxes, in closets, nor should they be used as coat or hat racks.

Only approved portable fire extinguishers must be used.

Portable fire extinguishers using carbon tetrachloride or chlorobromomethane are not allowed to be used.

Portable fire extinguishers must be maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

If an employee observes that a portable fire extinguisher is not in its designated place and/or its gauge indicates that it is discharged, the employee should report this information to their supervisor immediately so that the extinguisher can be replaced to its designated place and/or recharged.

SELECTION

The portable fire extinguishers that are selected to be used at your facility must be appropriate for the environment in which they will be used. For most facilities, the multipurpose type fire extinguishers that are approved for extinguishing Class A, Class B and Class C incipient stage fires are appropriate. Since the multipurpose fire extinguishers leave a residue that can harm sensitive equipment, carbon dioxide or halotron 1 extinguishers would be preferred in areas where there are computers or other sensitive electronic equipment.

INSPECTION

Portable fire extinguishers must be visually inspected monthly and subjected to an annual maintenance check. The date of the annual maintenance must be recorded and retained for at least one year after the last entry or the life of the shell, whichever is less.

Alternate equivalent protection must be provided whenever portable fire extinguishers are removed from service for maintenance and recharging.

2-fire extinguishers
HYDROSTATIC TESTING

Portable fire extinguishers must be hydrostatically tested every 5 or 12 years (dependent upon the type of extinguisher), except under the following conditions:

1. When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;
2. When the cylinder or shell threads are damaged;
3. When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;
4. When the extinguisher has been burned in a fire; or
5. When a calcium chloride extinguishing agent has been used in a stainless steel shell.

TRAINING

Employers should familiarize and train their employees in the use of portable fire extinguishers to extinguish small, incipient stage fires in the workplace. It must be emphasized that employees must not use the portable fire extinguishers to fight large fires. If the fire is too large to be extinguished by using a portable fire extinguisher, employees should pull the "Fire Alarm" and LEAVE THE BUILDING!

There are four basic steps to operating a portable fire extinguisher. An easy way to remember the procedure is to think of the word "PASS".

- P - Pull the pin: This means pulling out the pin located below the trigger.
- A - Aim low: Stand about 6 - 8 feet away from the fire and point the extinguisher nozzle at the base of the fire. Always hold the extinguisher vertically. Never cradle it horizontally or at an angle in your arms.
- S - Squeeze the trigger: Squeeze the trigger slowly and evenly. This will release the extinguishing agent and expelled it through the nozzle.
- S - Sweep side to side: Sweep the nozzle from side to side as the extinguishing agent is expelled - "driving the fire back". As the fire closest to you goes out, you may move closer to the fire and continue the sweeping motion until the fire is extinguished. **If the fire does not go out immediately, get out of the building!**

REFERENCES

Videos that are pertinent to this subject may be obtained, at no cost, from the Arkansas Department of Labor/ Arkansas Workers' Compensation Commission's Health and Safety Division Resource Center at (501)-682-9090.

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