LOYOLA UNIVERSITY CHICAGO
GUIDELINES FOR FIRE EXTINGUISHER USE

PURPOSE: In the hands of a trained person, portable fire extinguishers are great tools to protect people and property from fire during early stages. When using an extinguisher, it's important to know the characteristics of different fire extinguishers. This document provides guidance for the proper use of a fire extinguisher.

REGULATORY:

1910.157 - Portable fire extinguishers. | Occupational Safety and Health Administration (osha.gov)

NFPA 10 - Standard for Portable Fire Extinguishers, 2022 Edition National Fire Protection Association (NFPA)

Step One - Classification of Fires:

Class A: Ordinary solid combustibles such as paper, wood, cloth, rubber, and many plastics.

Class B: Flammable and combustible liquids such as petroleum greases, tars, oils, oil-based paints, solvents, lacquers, alcohols, and flammable gases.

Class C: Energized electrical equipment, appliances, and wiring.

NOTE: Water or a Class A fire extinguisher should never be used on an electrical fire.

Class D: Flammable metallic substances including sodium, potassium. aluminum, titanium, magnesium, lithium, and zirconium. These types of fires usually occur in industrial, manufacturing, or laboratory settings when the metal fines, tiny, thin pieces of metal or metal shavings or the dust generated during the machining process ignite, becoming the fuel element in the fire tetrahedron (fuel, oxygen, and heat combining in a self-sustaining chemical reaction). These types of fires may cause significant damage and are not simple to put out.

Class K: Fires involving vegetable oils, animal oils, or fats utilized in commercial cooking appliances

Step Two - Types of Fire Extinguishers:

All fire extinguishers are labeled to indicate which classes of fire they are designed to combat. Fire extinguishers are classified as types A, ABC, BC, D or K. It is important to use the right type of extinguisher on the specific class of fire to avoid personal injury or damage to property. Using the wrong type of extinguisher could cause electrical shock, explosion, or spread the fire.

Type BC: Carbon dioxide to be used on chemical or electrical fires.

Type D: Dry powder helps to smother and eliminate the oxygen element, as well as absorb

granular sodium chloride or copper based.

Type K: Used in kitchens on fires involving vegetable oils, animal oils, or fats utilized in commercial cooking appliances.

Step Three - Fire Extinguisher Use

1. Identify a clear exit/escape route. Before operating the fire extinguisher, make sure there is a clear evacuation path. The main objective is to remain safe and to exit the building. Call 911.

2. Stand back. Face the fire and keep your back to the clear exit/escape route you identified earlier. You should stay six and eight feet away from the flames as you prepare to operate the fire extinguisher.

3. Discharge the extinguisher. It can be difficult to think clearly during an emergency, so fire safety has a long-standing acronym to help a person recall the steps involved in operating a fire extinguisher. When extinguishing a fire, a person should PASS:

P: Pull the pin on the fire extinguisher.

A: Aim the extinguisher nozzle on the hose low, toward the base of the fire.

extinguished.

See Appendix A for additional information on the PASS Method.

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- Class A fires only cannot be used on electrical or grease fires. However, it is safe to use an extinguisher labeled for Class B and C fires on a Class A fire. While Class K fires are technically a subset of Class B fires, other contents in Class B extinguishers can make Class K fires worse, so it's best to get a separate extinguisher for cooking fires.

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- Don't neglect fire extinguisher maintenance: The fire extinguisher should be examined for physical damage such as corrosion, leakage, or dents. The pull pin should be examined to make sure that it is in place and the seal has not been broken. The extinguisher's pressure needle should always point to the green zone. When it drops to the red zone, it doesn't have enough pressure to release the extinguishing agent. This can happen even if the extinguisher is never used. Adding pressure (also called "recharging") makes the extinguisher fully functional again, but this isn't a Do-It-Yourself job. A certified fire service company should recharge the fire extinguisher. The tag on each fire extinguisher should be initialed and dated after the inspection is completed. The University fire extinguishers are checked on an annual basis by an outside vendor.

- Fire extinguishers come with an expiration date, after which the extinguishing agent is no longer effective. In addition to or as part of the internal maintenance examination the fire extinguisher cylinders must be hydrostatically tested to ensure their integrity and ability to safely contain the pressure used to expel the agent. Typically, pressurized water, carbon dioxide, and wet chemical extinguishers need to be hydrostatically tested every 5 years. Dry chemical extinguishers need to be tested every 12 years.

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APPENDIX A