

Carnegie Mellon University Environmental Health & Safety FIRE | LAB | WORK

Fire Extinguisher Reference Guide

The safety of yourself and others is always the first priority. In the event of a fire, your focus should be on evacuating to a safe place and activating the closest fire alarm pull station on the way out. If the fire is still in the early ignition stage (typically no larger than a small waste basket) and you have completed the CMU Fire Extinguisher Training, you may decide to attempt to extinguish the fire before evacuating.

The following guide can be used as a review of the 5 classes of fire, the available types of fire extinguishers and the how to effectively operate a fire extinguisher.

Classification of Fires



Class A Fires

Common combustibles such as wood, paper and fabric.



Class B Fires

Flammable liquids and gases such as gasoline, oils, alcohol and propane.



Class C Fires

Energized electrical equipment such as appliances, batteries, electrical panels and transformers.



Class D Fires

Combustible metals such as lithium, magnesium, sodium and potassium.



Class K Eiros

Cooking media such as oils, fats and grease.

Types of Fire Extinguishers

Air Pressurized Water



Class of Fire

Extinguishing Agent

Class A Only

Water

Means of Extinguishment

30 feet

Cooling and heat absorption

Discharge Time 30 - 50 Seconds

Effective Range

Dry Chemical (Multipurpose)

Class of Fire

Extinguishing Agent

Class ABC

Monoammonium Phosphate

Means of Extinguishment

Effective Range

10 feet

Breaking of the chemical chain reaction

Discharge Time 10 – 30 seconds



Dry Chemical (Regular)



Class of Fire

Extinguishing Agent

Class BC

Sodium Bicarbonate/ Potassium Bicarbonate

Means of Extinguishment

Effective Range

10 feet

Breaking of the chemical chain reaction

Discharge Time

Carbon Dioxide (CO2)

Class of Fire

Class BC

Extinguishing Agent

Carbon Dioxide (CO2)

Means of Extinguishment

Oxygen displacement Effective Range 5 feet

Discharge Time

10 – 20 seconds



Halogenated Agent (Clean Agent)



Class of Fire

Class ABC / BC

Agent

Extinguishing

Combinations of Halogens, Carbon & Hydrogen

Means of Extinguishment

Breaking of the chemical chain reaction

Effective Range

10 feet

Discharge Time

10 – 15 seconds

Dry Powder

Class of Fire

Class D only

Extinguishing Agent

Powdered Graphite, Sodium Chloride or Copper

Means of Extinguishment

Heat absorption through an occlusive crust Effective Range

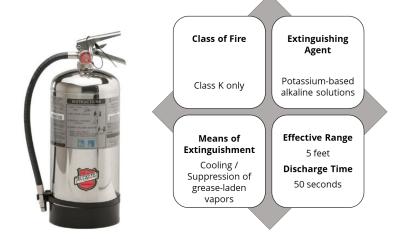
5 feet

Discharge Time

20 seconds



Wet Chemical



Best Practices

- Always activate the closest manual fire alarm pull station before attempting to
 extinguish a fire. This will alert the fire department to respond to your location and
 allow the occupants of the building to begin the evacuation process. It is also best
 practice to have someone place a call directly to 911 to ensure the fire department
 is on the way.
- When choosing a fire extinguisher, select one that is classified for use on the type of fire that is involved. For example, you wouldn't want to select a water fire extinguisher (Class A fires only) for use on an electrical fire (Class C fires).
- Once you have selected the appropriate fire extinguisher, approach the fire from uphill and upwind, as applicable.
- As you approach the fire, utilize the P.A.S.S. method of operation, beginning about 10 feet away.

P= PULL THE PIN

A= <u>AIM</u> THE NOZZLE AT THE BASE OF THE FIRE

S= <u>SQUEEZE</u> THE DISCHARGE LEVER

S= SWEEP SIDE TO SIDE

 Pay attention to your surroundings at all times and never let the fire get between you and an exit.

Safety concern, training request or other inquiry?

Reach out to the Environmental Health and Safety Department today!

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