FIRE EXTINGUISHER TRAINING

Environmental Health and Safety
Michigan State University

In Case of Emergencies
Call 911 for Police, Medical or Fire

Fire Triangle (Tetrahedron)

Four elements that must be present for a fire to exist.

1. Oxygen to sustain combustion
2. Heat to raise the material to its ignition temperature.
3. Fuel to support the combustion
4. Chemical Reaction between the other three elements.

Fire Prevention

- The concept of Fire Prevention is based upon keeping these four elements separate.
- Remove any of the 4 elements to stop a fire.
- Essentially, fire extinguishers put out fire by taking away one or more elements of the fire triangle/tetrahedron.

CLASSIFICATION OF FUELS

- Not all fires are the same.
- Classification according to the fuel.
- Use appropriate extinguisher for the type of fire.

Types of Fires

- Class A
  - Paper, Plastic, Wood
- Class B
  - Flammable Liquid
- Class C
  - Electrical
- Class D
  - Flammable Metal (sodium, potassium, magnesium)
- Class K
  - Grease, cooking oils, animal fats
Three Most Common Types of Fire Extinguishers

- Water
- Carbon Dioxide
- Dry Chemical

MSU Campus Uses ABC Multipurpose Dry Chemical

Air-Pressure Water Extinguisher (APW)

- APWs are large, silver extinguishers that are filled about two-thirds of the way with ordinary tap water, then pressurized with normal air. In essence, an APW is just a giant squirt gun.
- APWs stand about 2 feet tall and weigh approximately 25 pounds when full.
- APWs are designed for Class A (wood, paper, cloth) fires only.

Carbon Dioxide (CO2)

- Carbon Dioxide extinguishers are filled with non-flammable carbon dioxide gas under extreme pressure. You can recognize a CO2 extinguisher by its hard horn and lack of pressure gauge.
- CO2 cylinders are red and range in size from 5 lbs to 100 lbs or larger. In the larger sizes, the hard horn will be located on the end of a long, flexible hose.
- CO2s are designed for Class B and C (flammable liquid and electrical) fires only.

Dry Chemical Extinguisher

- At MSU, the dry chemical extinguishers are filled with a fine yellow powder. The greatest portion of this powder is composed of monoammonium phosphate. Nitrogen is used to pressurize the extinguishers. They are designated for “ABC” fires.
- ABC extinguishers are red and range in size from 5 lbs to 20 lbs on campus.

Always Read the Label

Chemistry Class D Extinguishers

- Locations
  - 4th floor Hallway
  - 5th floor Hallway
  - 1st Floor Prep Area
- Flammable Metals
  - sodium
  - potassium
  - magnesium
  - aluminum
In Case of Fire

- Isolate Area-Close Fire Doors
- Pull alarm to evacuate building
- Call 911 to summon fire department
- Assist any person in danger

DO NOT Fight the Fire If:

- You don’t have adequate or appropriate equipment.
- You are not trained on the extinguisher you will use.
- You might inhale toxic smoke.
- Your instincts tell you not to.

Ask These Questions

- Do you know what is burning?
- Is the fire spreading rapidly beyond the spot where it started?

Only Fight the Fire IF:

- Fire is small and contained.
- You have a means of escape.
- Your instincts tell you it’s ok.
- You have had training in the use of the fire extinguisher.
- You have the correct fire extinguisher and it is in good condition.

And You Have:

- Isolated Area-Close Fire Doors
- Pulled alarm to evacuate building
- Called 911 to summon fire department
- Assisted any person in danger

Fire Extinguisher Use
Pull the Pin

- This will allow you to discharge the extinguisher.

Aim at the Base of the Fire

- If you aim at the flames (which is frequently the temptation), the extinguishing agent will fly right through and do no good. You want to hit the fuel.

Squeeze the Top Handle or Lever

- This depresses a button that releases the pressurized extinguishing agent in the extinguisher.

Sweep From Side to Side

- Sweep from side to side until the fire is completely out. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

Maintenance

- Call MSU Police

Hands On Training

- Fire Simulator.
- Real extinguisher will be louder and have pressure.
- Real extinguisher is normally mounted.
- You will be standing in the area when the fire starts.