



Training Solutions, Delivered!

FIRE SAFETY FOR INDUSTRIAL WORKERS

(Concise)

**Leader's Guide, Fact Sheet
& Quiz**

Item Number: 4039

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This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

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FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:

Due to the hazardous and flammable materials often used or stored at industrial facilities, fires at these locations can have disastrous consequences. In fact, 3,000 workers are injured and another 150 die each year in industrial fires. The good news is that almost all workplace fires can be prevented. That's the purpose of this program: to show the safe work practices employees should follow to reduce the risk of a workplace fire and to review things that should be done if a fire should break out.

Topics include five classes of fire, good housekeeping, handling and storing hazardous materials, static electricity, the emergency action plan, evacuation procedures and fire extinguishers.

PROGRAM OBJECTIVES:

After watching the program, the participant will be able to explain the following:

- How fires are ignited and how they can be extinguished;
- What the five classes of fire are and what extinguishing agents are used to put them out;
- Why good housekeeping and proper handling and storage of flammable materials are important in preventing industrial fires;
- What precautions to take when electrical hazards are present or when performing hot work;
- How to safely evacuate an area during a fire emergency;
- How to decide to use a fire extinguisher to put out a fire and how to use it properly.

PROGRAM OUTLINE:

BACKGROUND

- Industrial fires, despite modern-day advances that have been designed over the years to prevent such incidents, still occur at an alarming rate.
- Due to the hazardous and flammable materials often used or stored at these facilities and their proximity to employees, these fires can have disastrous consequences. In fact, 3,000 workers are injured and another 150 die each year in industrial fires.
- While you may work at a site that is susceptible to such an emergency, the good news is that almost all workplace fires can be prevented.

THREE REQUIREMENTS OF FIRE

- Three elements are required for all fires: a heat source, fuel and oxygen.
- A wide array of heat sources can ignite fires in industrial facilities, including electricity from faulty cords, plugs, wiring and circuits or static electrical sparks, friction, which results from chains, belts, pulleys, motors and other equipment with moving parts that rub together to generate heat and heat produced from welding and cutting operations, chemical reactions and hot surfaces, just to name a few.
- After a fire has been ignited, more heat will be produced and it will grow larger as long as there is sufficient fuel and oxygen present.
- A fire will continue to burn until one of three things happens: its heat is removed, all its fuel is burned up or its oxygen runs out.
- When a fire is extinguished, it is usually accomplished by removing either the heat source or the oxygen.

FIVE CLASSES OF FIRE

- To remove a fire's heat source or oxygen with a fire extinguisher, the proper extinguishing agent for the specific type of fuel that is burning must be used.
- Fires are divided into five classes according to the types of materials that fuel them.

- Class A fires are fueled by solid combustibles such as paper and wood. These types of fires are usually extinguished with water which reduces the temperature of the burning material, thus removing the heat source.
- Class B fires involve flammable liquids and some gases, including gasoline, propane and oil. A chemical foam or powder is normally used to smother this class of fire by removing all of its oxygen.
- Electricity fuels Class C fires and these fires are also extinguished with a smothering agent that must be non-conductive.
- Class D fires are fueled by combustible metals such as magnesium, potassium and titanium. They are usually put out with special chemical powders or foam which must be built up to completely cover the burning metal and eliminate the fire's oxygen supply.
- Class K fires involve vegetable oils, animal oils or fats in cooking appliances. They are extinguished with potassium acetate discharged in a fine mist that displaces its oxygen while preventing the spread of grease and helping to cool the appliance after the fire is out.
- To prevent fires, you must take the necessary precautions to keep fuels from coming in contact with any type of heat or ignition source.

GOOD HOUSEKEEPING

- Keep your work area neat with tools and supplies organized. Only keep on hand the amount of work materials you need for your shift since they can easily become fuel for fires.
- Make sure paper, shavings, waste and byproducts don't accumulate on the floor.
- Tools, machinery and equipment should be kept clean and inspected regularly.
- Keep aisles and paths of travel clear of debris and obstacles and ensure that doors and exits are marked clearly and not blocked or locked.

HANDLING & STORING HAZARDOUS MATERIALS

- Another critical component of fire prevention is handling and storing flammable and hazardous materials properly.
- Refer to the label and material safety data sheets for safe handling and storage procedures of all flammable substances.
- These materials should be kept a safe distance away from ignition sources. They must also be stored in approved containers and these containers should be kept in designated fireproof cabinets when not in use.

STATIC ELECTRICITY

- Another risk associated with hazardous materials is static electricity, which can be created when liquids are transferred from one container to another. The discharge of static electricity can cause sparks which can ignite a fire.
- To prevent these sparks from igniting any flammable vapors that may be present in the area, make sure to use proper bonding and grounding procedures when transferring hazardous chemicals.

ELECTRICAL HAZARDS

- In addition to static electricity, there are other electrical hazards in industrial facilities that you need to be aware of.
- Electrical blazes are the most common type of workplace fire and overloaded circuits are often to blame. Avoid plugging in too many cords from tools and equipment into one outlet; it could easily become overloaded and result in a fire.
- Make it a habit to check cords, outlets and plugs periodically to make sure they are in good condition. Don't use any equipment that has a damaged cord; follow your company's procedures for removing it from service and having it repaired or replaced.

WELDING & CUTTING/HOT WORK

- Welding and cutting operations and other hot work also require special precautions to prevent the risk of fire.
- Remove all flammable materials within 35 feet or cover those that cannot be moved with fireproof blankets or similar protection.
- When welding items that conduct heat, make sure they aren't near any combustible materials or run through walls.
- During hot work operations, a properly trained co-worker should be designated to stand by as a fire watch.
- The fire watch should look for any signs of fire while welding and cutting is in progress and continue to monitor the area for at least 30 minutes after work is complete.

EVACUATION PROCEDURES

- Take all fire alarms and smoke detectors seriously. If you hear either of them go off, you should evacuate the premises immediately.
- Stay calm as you are exiting your work area. Walk in an orderly fashion; don't run or attempt to pass co-workers.
- Check doors for heat before opening. To check a door, contact it with the back of your hand, which is more sensitive to heat than your palm. Never open a door that feels hot since it is likely being heated by fire on the other side. Instead, find an alternative route.
- Get close to the floor to avoid inhaling any rising smoke. If possible, cover your nose and mouth with a damp cloth and take short breaths.
- Once safely out of harm's way, go to the meeting place designated in your organization's emergency action plan. It is critical that you go to this area so everyone can be accounted for by the authorities or emergency personnel.

PROPER USE OF FIRE EXTINGUISHERS

- You may be asking yourself, "What about using a fire extinguisher to put out a fire?" First and foremost, three conditions must be met for you to make any attempt to put out a fire with an extinguisher.
- Number one, you must be trained and authorized to use the fire extinguishers at your facility. Secondly, you must have the appropriate type of extinguisher for the class of fire that is burning, and finally, the fire must be small enough that you can put it out without risking your life or the lives of your co-workers.
- If you decide to use an extinguisher to fight a fire, first make sure someone sounds the fire alarm before you approach the fire. Also, make sure you have a visible escape path and cannot be trapped by the fire should it grow larger.
- When you are about six to 10 feet from the fire, discharge the extinguisher using the PASS method.
- Pull the pin. Aim the nozzle at the base of the fire. Squeeze the trigger to discharge the extinguisher. Sweep the nozzle from side to side.
- It's a good idea to continue sweeping the fire until all the extinguishing agent has been used, even if the fire appears to be out before then, and then evacuate the area immediately.
- Also, don't try to find another extinguisher if you have been unable to extinguish the fire. Place the empty one on its side and evacuate to the designated area.

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ANSWERS TO THE REVIEW QUIZ

1. d

2. c

3. a

4. c

5. a

6. b

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REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. A fire will continue to burn until _____.
 - a. Its heat is removed
 - b. All its fuel is burned up
 - c. Its oxygen runs out
 - d. Any of the above answers occurs

2. Which class of fire is fueled by combustible metals and is usually extinguished with special chemical powders or foam?
 - a. Class B
 - b. Class C
 - c. Class D

3. Electrical fires are the most common type of fire in the workplace.
 - a. True
 - b. False

4. When performing hot work, all flammables within _____ feet should be removed from the area if they cannot be properly protected from fire.
 - a. 10
 - b. 25
 - c. 35

5. You should always use _____ to evacuate the upper levels of a facility during a fire evacuation.
 - a. The stairs
 - b. An elevator

6. Which of the following is ***not*** one of the three conditions that must be met when deciding to use a fire extinguisher to put out a fire?
 - a. You must be trained and authorized to use fire extinguishers
 - b. You must have a back-up extinguisher on hand in case you run out of extinguishing agent
 - c. The fire must be small enough that you can put it out without risking lives