



Home fire safety fact sheet

Extinguishing A Fire

To know how to extinguish a fire you need to understand a little about fire and how it works.

What Is Fire?

In very simple terms, fire is a chemical chain reaction in which oxygen is combined with fuel in the presence of heat. This rapid oxidation produces heat and light (flames).

Fire can usually take place only when three critical elements are present. These are:

1. Oxygen

Oxygen is usually readily available as it makes up 21% of the air we breathe.

2. Fuel

Fuel can be solid combustibles like paper, furniture, clothing, wood and plastics. It can also be flammable liquids (like petrol, kerosene, paints, solvents and cooking oils or fats), flammable gases (like natural gas, LPG or acetylene) and sometimes it can be metal.

3. Heat

Heat is required to produce ignition and then the heat given off by the oxidation reaction sustains the fire once the process has begun.

Heat sources that can start a fire can include:

- heating and cooking appliances
- faulty electrical equipment
- cigarettes, lighters and matches
- friction

When these three elements combine in a rapid oxidation process a chemical chain reaction ensues. This chemical chain reaction is also a necessary component of fire and becomes the fourth element of fire.

Note that, even if the fuel is a solid (e.g. wood) or a liquid (e.g. petrol) it is the vapours given off when the fuel is heated that burn.

The Theory Of Extinguishing A Fire

Fires are categorised into different classes. The method you use to extinguish a fire will depend on the class of fire.

- Class A** Fires involving carbonaceous solids, such as wood, cloth, paper, rubber and plastics. Class A does not include flammable metals (see Class D).
- Class B** Fires involving flammable and combustible liquids.
- Class C** Fires involving combustible gases.
- Class D** Fires involving certain combustible metals, including potassium, sodium and magnesium. Specialist advice should be sought.
- Class E** Fires involving energised electrical equipment.
- Class F** Fires involving cooking oils and fats.

A fire will burn as long as there is oxygen, fuel and heat available. Removal of any one of these elements will extinguish the fire. Interrupting the chemical chain reaction of the fire will also extinguish the fire.

Starving The Fire

Remove the fuel – i.e. the unburnt material. This can include turning off the gas in the event of a Class C fire.

Smothering The Fire

Prevent oxygen from combining with the fuel. This is how a fire blanket works.

Cooling The Fire

Reduce the temperature of the burning material to below its ignition point. This happens when you put water on a Class A fire.

Interrupting The Chemical Chain Reaction

Some fire extinguishers (e.g. a dry chemical powder extinguisher) interrupt the chain reaction and smother the fire at the same time.

Fire Extinguishing Tools

Portable fire extinguishers, fire blankets and water provide quick and efficient methods of controlling a small fire (i.e. a fire no larger than a waste paper basket).

Find detailed information about the different types of fire extinguishers, and their use in our “Home Fire & Life Safety Fact Sheet – [Fire Extinguishers for Domestic Use](#)”.

Find detailed information about fire blankets and how to use them in our “Home Fire & Life Safety Fact Sheet – [Fire Blankets](#)”.

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How To Extinguish A Fire

General

When you attempt to extinguish a fire:

- **do not put your life at risk**
- whenever possible call for support and have someone else call triple zero (000) for the fire service
- ensure that all other people have been evacuated from the house
- make sure that you are using the right method or fire extinguisher to put out the fire, especially if electricity or burning fat is involved. (See our Home Fire & Life Safety Fact Sheet – [Fire Extinguishers for Domestic Use.](#))

If you aren't successful in extinguishing the fire, evacuate immediately, closing the door on the fire if possible.

When using a fire extinguisher:

- Raise the alarm, summon help and have someone call the fire service on '000'.
- Keep your escape path at your back. Never allow the fire to get between you and the escape path.
- Remember the acronym **PASS**

P =	Pull	the pin
A =	Aim	the extinguisher nozzle at the base of flames
S =	Squeeze	the trigger while holding the extinguisher upright
S =	Sweep	the extinguisher or nozzle from side to side covering the base of the fire

- Observe the fire after the initial extinguishment. It may re-ignite.

The contents of small extinguishers may last as little as eight seconds and up to 60 seconds for larger extinguishers. The time to discharge an extinguisher depends on the type and size of the extinguisher.

Do not use (or continue to use) an extinguisher if:

- you are putting your life at risk
- the fire is larger than a waste paper basket
- the fire is spreading quickly beyond the point of origin
- the extinguisher is not having any effect or is having an adverse reaction on the fire
- you cannot extinguish the fire quickly (less than 30 seconds)
- you do not know what fuels are involved in the fire.

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If any of the above circumstances apply then you should:

- close the door to contain the fire
- ensure everyone is out of the building
- ring the fire service on '000' from a phone outside of the building
- never go back into the building once out
- wait to meet the fire service.

Remember - Saving lives through a quick escape is far more important than saving property. The first priority must be evacuation and calling the fire service on 000.

Ovens

If a fire occurs in an oven DO NOT OPEN THE DOOR. Turn off the heat and call 000 for the fire service.

Barbeques

If you have a barbeque fire caused by a leaking gas cylinder use water from a garden hose to cool the cylinder. Call the fire service on 000 immediately and evacuate the area.

Boats

When using an extinguisher in a boat ensure that:

- you turn the ignition off
- you are upwind
- you are in a position to leave the boat quickly with life jackets if you can't put the fire out.

Cars

When using an extinguisher in a car:

- turn the ignition off and apply the handbrake
- call for support to call 000 for the fire service
- ensure that you are upwind of the fire
- be aware of other traffic
- LPG powered cars - isolate the gas cylinder if you know how to and can do so safely
- if it is an engine fire pop the bonnet but DO NOT OPEN IT. Fire the extinguisher through the small gap
- leave the bonnet closed.

See the following MFS Home Fire & Life Safety Fact Sheets:

[Fire Blankets](#), [Recreational Marine Fire Safety](#), [Recreational Vehicles](#), [Fire Extinguishers for Domestic Use](#), and [Vehicle Fires](#).