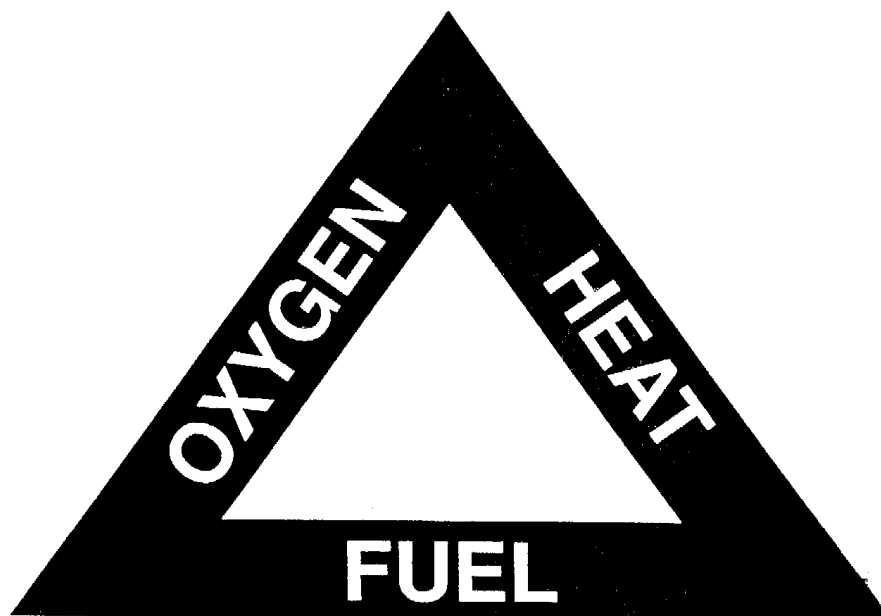


COMBUSTION

Combustion (or “fire”) is a rapid chemical reaction in which heat and light are given out. The heat produced is sufficient to maintain the reaction.



The Triangle of Combustion

Three things are necessary for combustion: heat, fuel and supporter of combustion. These three factors form the **triangle of combustion**. Removal of one of them means that combustion is no longer possible.

The Role of Air in Combustion

The normal composition of air is:

- Oxygen 21%
- Nitrogen 78%
- Other gases (argon, carbon dioxide) 1%

Because air contains 21% oxygen, it is able to supply a supporter of combustion to a fire.

Other materials may also support combustion. These include:

- Oxidising agents; which provide oxygen from within their molecules e.g. nitrates, permanganates, chlorates, and peroxides.
- Chlorine gas; which will support combustion of substances such as hydrogen, reactive metals and some carbon-containing (organic) materials such as turpentine.

Types of fuel (combustible materials)

Solids	Liquids	Gases
Carbon	acetone	hydrogen
Sulphur	carbon disulphide	hydrogen sulphide
Phosphorus	alcohol	carbon monoxide
Sodium	petrol	acetylene

Magnesium	kerosene	methane
Wood	L.P.G.	C.N.G.
Coal	methylated spirits	coal gas
Wax	turpentine	
Plastics		

Heat sources (which may cause combustion to start)

- Chemical reaction
- Friction
- Electrical energy