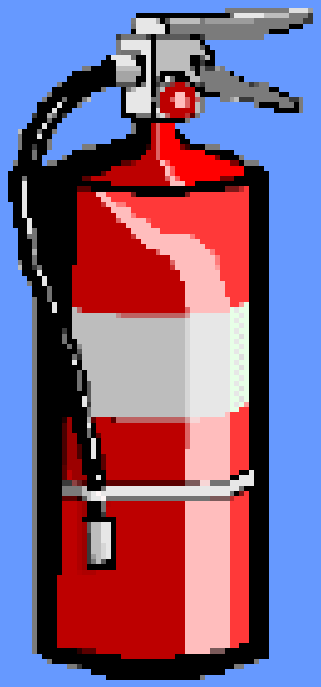
DIRECTORATE OF FIRE AND EMERGENCY SERVICES
ST.INEZ, PANAJI- GOA

Phone: (0832)2225500, 2423101,2425101
Fax: (0832) 2225500
Website: www.goadfes.gov.in
Email: dir-fire.goa.nic.in



BASIC

FIRE

SAFETY

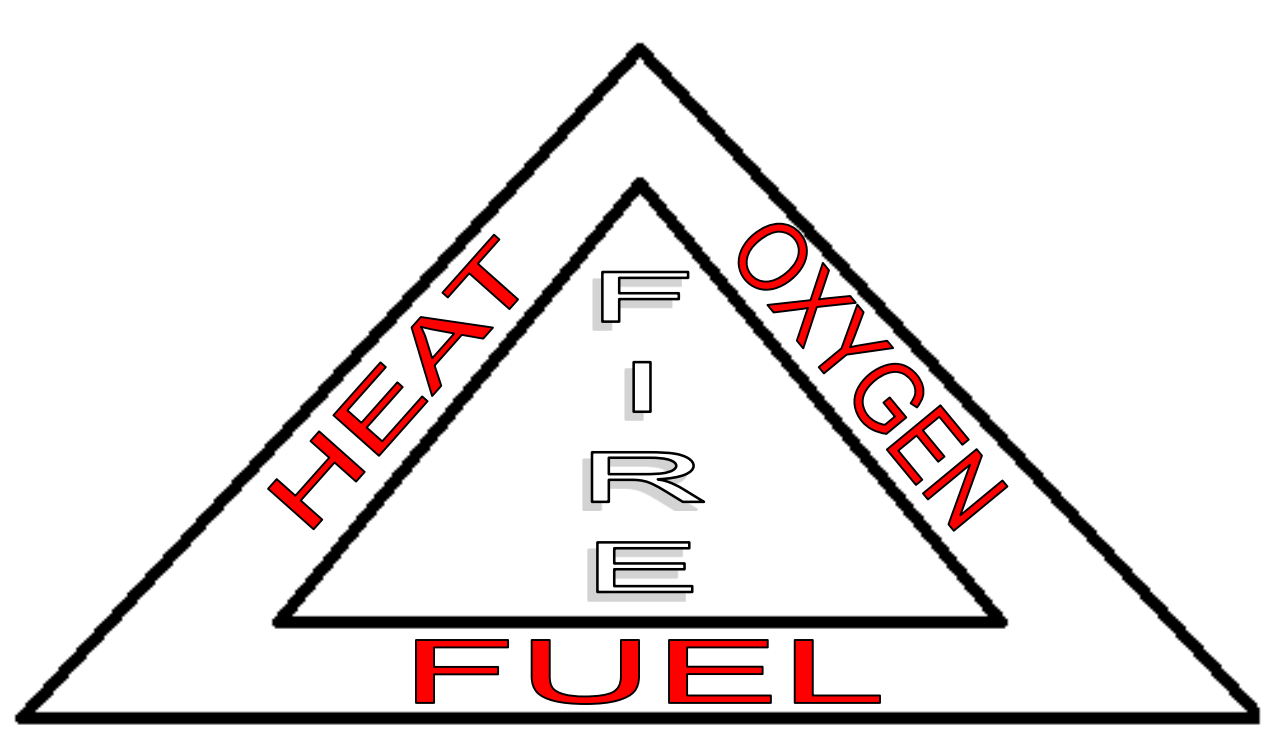
Fire

- **F**IND
- **I**NFORM
- **R**ESTRICT
- **E**XTINGUISH

What is Fire?

Fire is a chemical reaction in which Heat, Light, and Smoke is evolved. To generate fire, Heat, Fuel and Oxygen is essentially required in balance ratio. Shortage of any one restricts occurrence of fire.

TRIANGLE OF FIRE / COMBUSTION



The Fire Triangle

Three things must be present at the same time to produce fire:

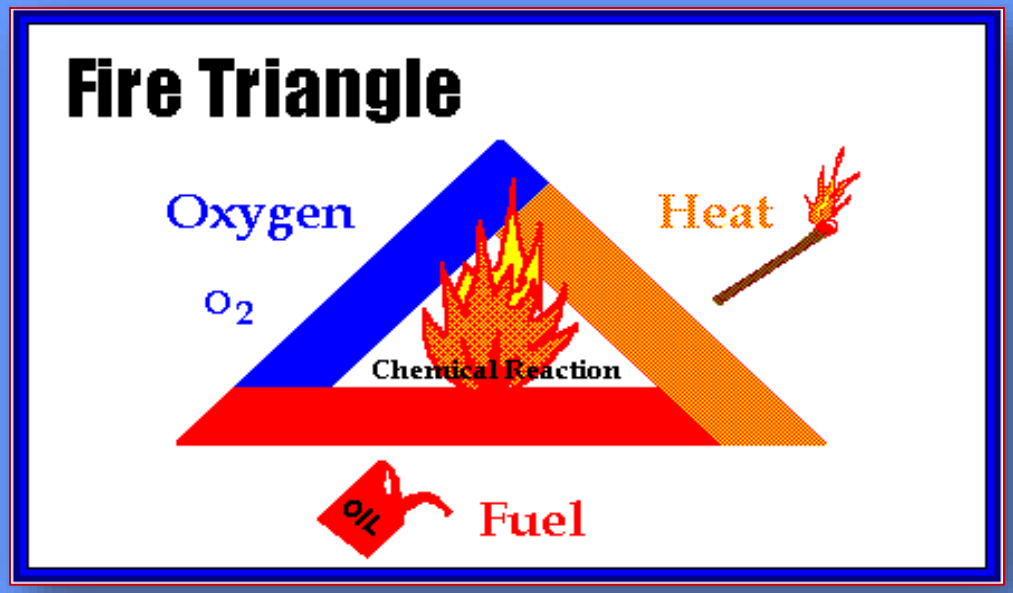
1. Enough OXYGEN to sustain combustion
2. Enough HEAT to reach ignition temperature
3. Some FUEL or combustible material

Together, they produce a CHEMICAL REACTION that results in what we term a "FIRE"

Take away any ONE of these and the fire will be .....

E X T I N G U I S H E D

EFFECTS REQUIRED FOR FIRE EXTINCTION

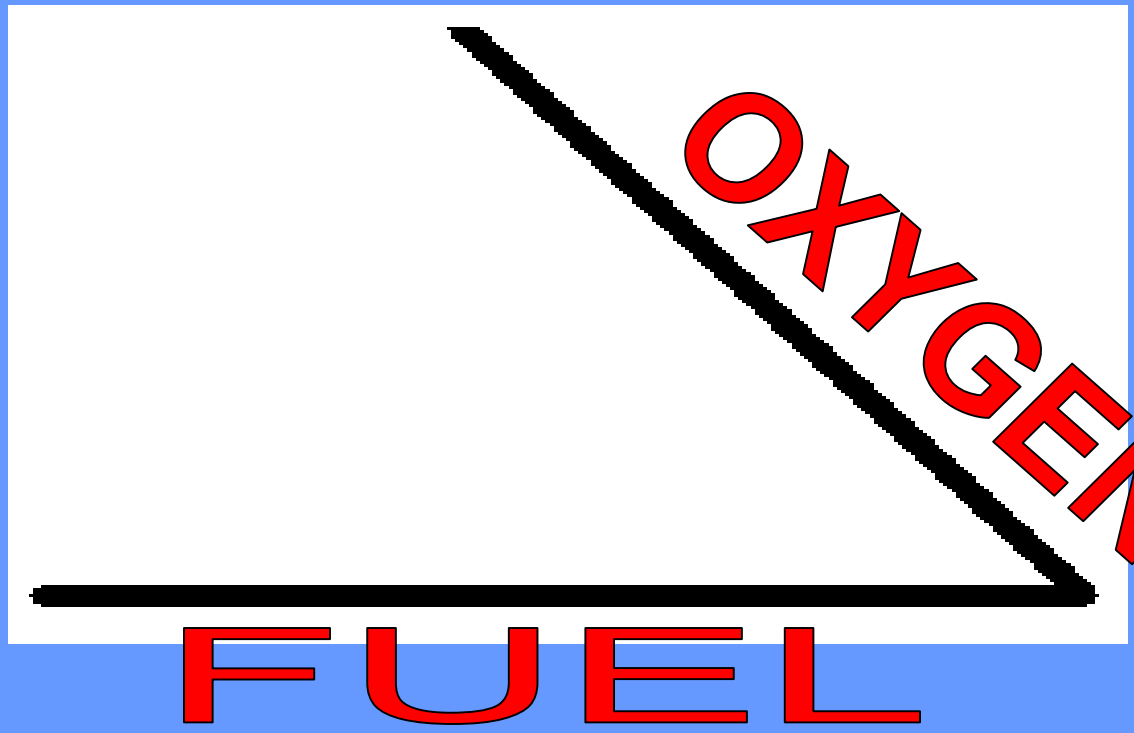


Effects required for Fire Extinction:

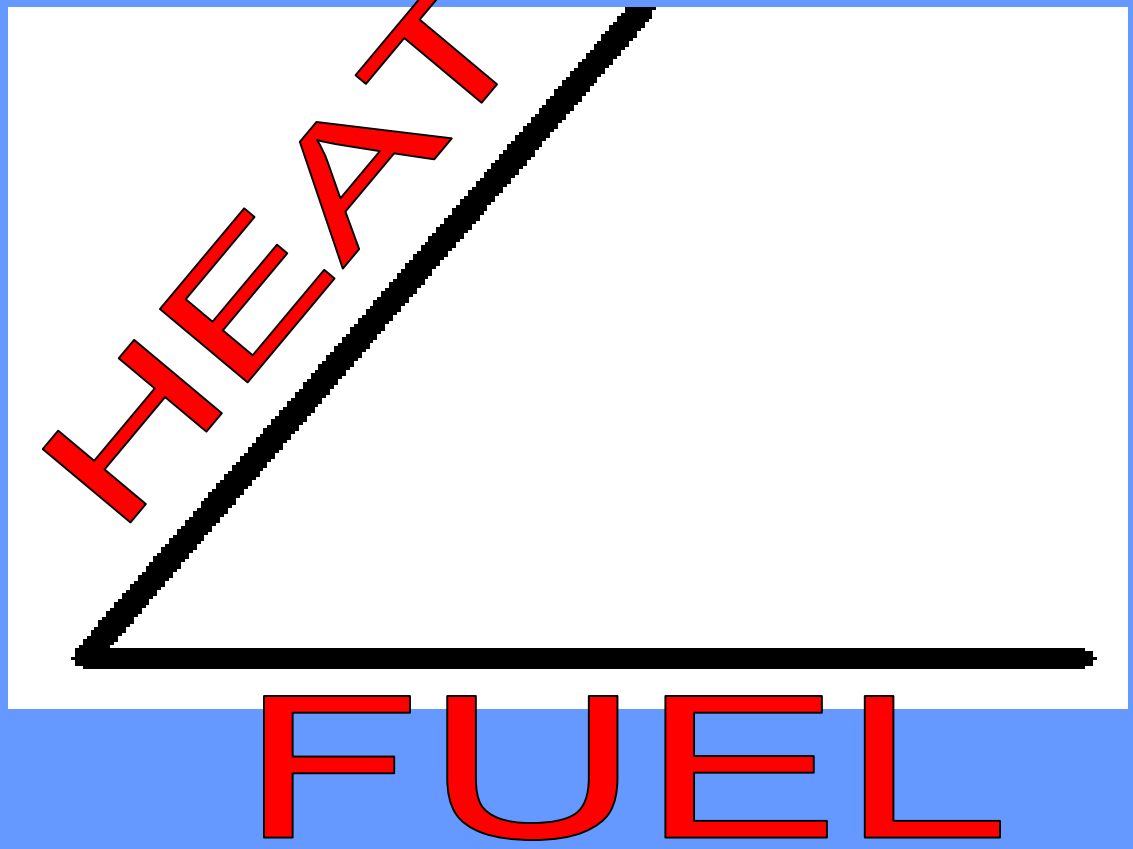
1. For eliminating **HEAT** a **COOLING** effect is required.
2. For removal of **FUEL** a **STARVATION** effect is required
3. For exclusion of **OXYGEN** a **SMOTHERING / BLANKETING** effect is required.

METHODS OF EXTINCTION

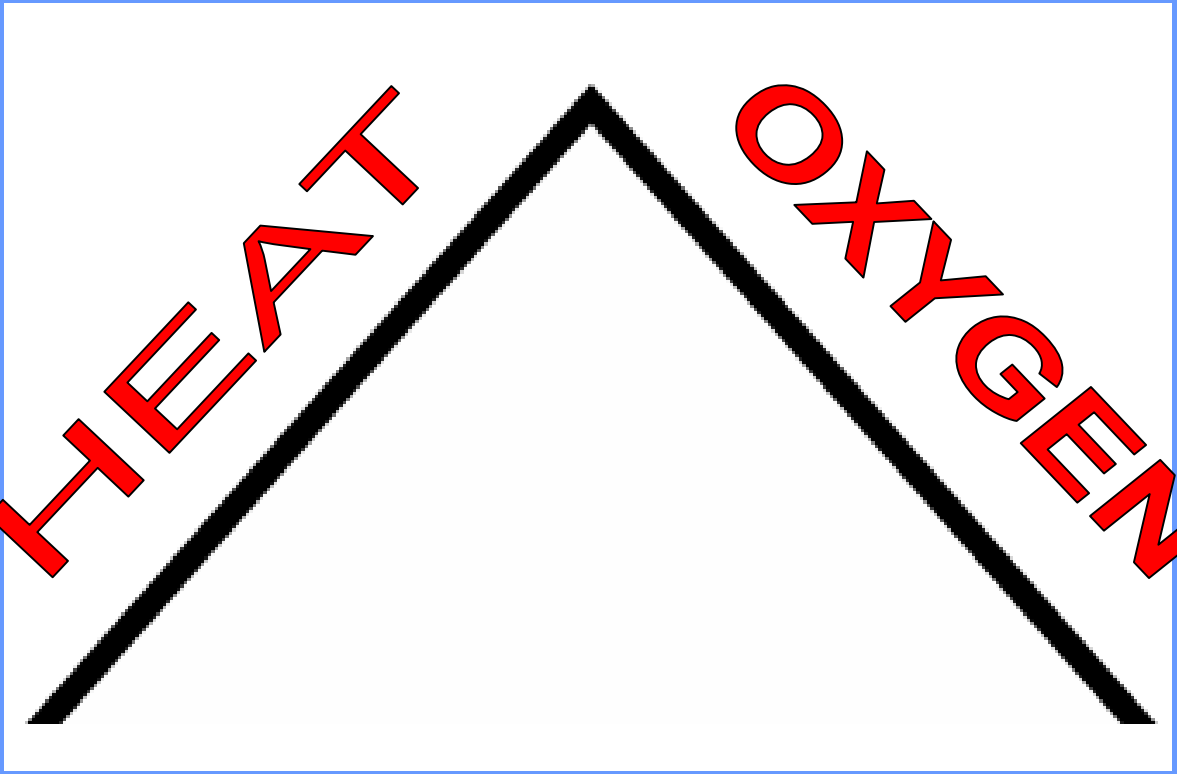
(1) COOLING



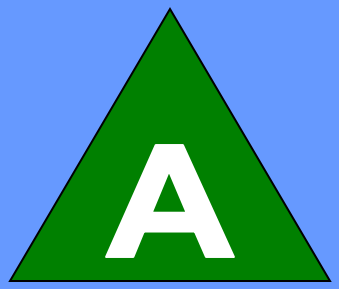
(2) SMOTHERING

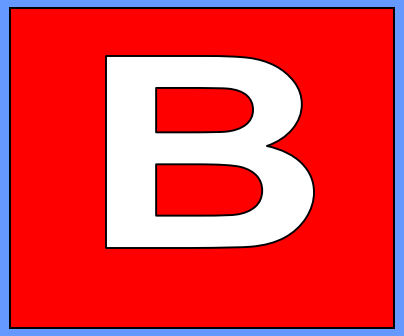


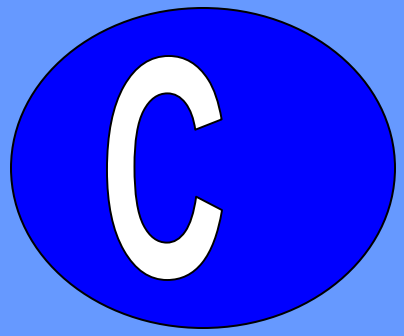
(3) STARVATION



Broad Classification of Fire And Suitability of Portable Chemical Fire Extinguishers

Class "A" 	Fires Involving ordinary combustible material (Such as wood, Cloth, Rubber and many Plastics) requiring the heat absorbing (cooling) effects of water, water solution, or the coating effects of certain dry chemicals which retard combustion.	Fire appliances expelling water. (Water Gas type fire extinguisher or water stored pressure type).

Class "B" 	Fires involving flammable or combustible liquids, flammable gases, greases and similar materials where extinguishment is most readily secured by excluding air (Oxygen), inhibiting the release of combustible vapours or interrupting the combustion chain reaction.	Fire Extinguisher discharging Foam, Carbon dioxide or Dry Powder.

Class "C" 	Fire involving gaseous substance under pressure where it is necessary to dilute the burning gas at a very fast rate with an inert gas or powder.	Fire Extinguisher discharging Dry powder or Carbon Dioxide / Inert Gas Extinguishants.

Class "D"

Fires involving certain combustible metals (such as magnesium, Titanium, Zirconium, Sodium, Potassium etc.) requiring a heat absorbing extinguishing medium not reactive with burning metals.

Fire Extinguisher Discharging Special Dry Powder.

Types of Fire Extinguishers

Different types of fire extinguishers are designed to fight different classes of fire.

The most common types of fire extinguishers are:

1.	Water Co_2 (BIS 940)	A
2.	Mechanical Foam (BIS 10204)	B
3.	Carbon Dioxide (BIS 2878)	B C
4.	Dry Chemical Powder (BIS 2171)	B C
5.	Dry Chemical Powder, ABC type (BIS 13849)	B C
6.	Special Dry Chemical Powder (BIS 4861)	D

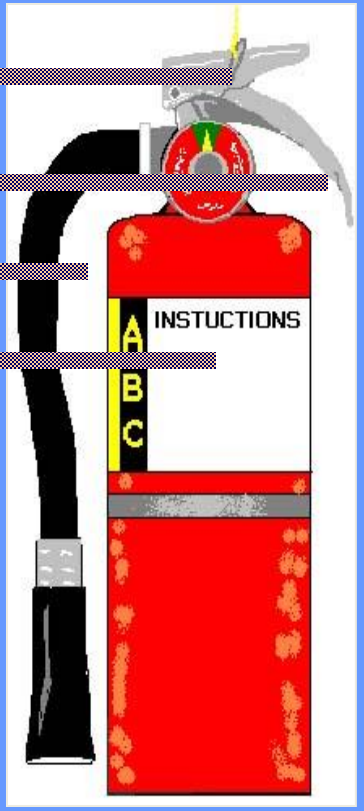
** BIS – stands for The Bureau of Indian Standards*

Suitability of Fire Extinguisher use

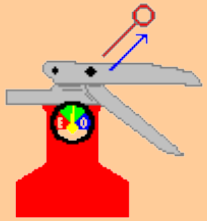
Sr. No.	Type	A	B	C	D
1	Water Co_2	√	χ	χ	χ
2	Mechanical Foam	χ	√	χ	χ
3	Carbon-Dioxide	χ	√	√	χ
4	Dry Powder	χ	√	√	χ
5	Special Dry Powder	χ	χ	χ	√

Fire Extinguisher - Common features

- Locking pin
- Carrying handle / operating lever
- Pressure gauge
- Label :
  - Type (Water, Foam, Co_2, Dry Powder)
  - Classification (A, B, C, D)
  - NFPA capacity Rating
  - Instructions
- Discharge nozzle or horn

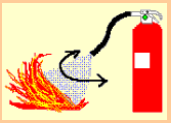


PULL the pin



SWEEP

from side to side

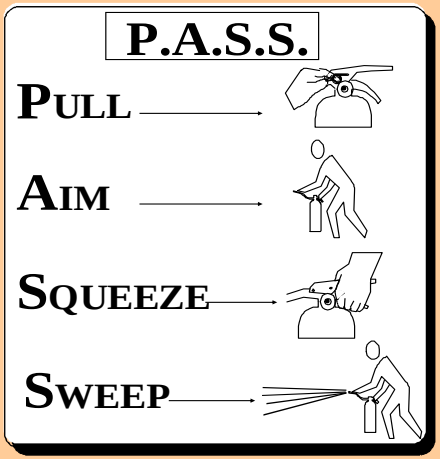


Remember the PASS word:

1) Keep your back to a clear escape route,

2) Stand back 6 to 8 feet from the fire,

3) **Then >>:**

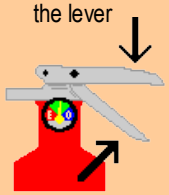


AIM

LOW at the base of the fire

SQUEEZE

the lever



BASIC FIRE SAFETY TIPS

In case of fire

- Be alert and act fast but do not get panic
- Raise the alarm. Inform nearest Fire Station
- Rescue the trapped Persons inside the building
- Give first aid if necessary
- Do not attempt to put off fire on live electricity
- Switch off the mains & carryon with fire fighting
- Use water or sand on wood, paper, textile fire
- Use foam extinguisher on oil fire
- Use Carbon-di-oxide or DCP on electrical fire
- Contact the nearest Fire Station on Tel. 101

In case of fire burns

- Pour Ice cold water
- Stop running when your body catch fire
- Cover the body with a blanket or rag and roll on the ground or use water
- Smother the flames
- Do not disturb the burns & blisters, give treatment for shock
- Drink lot of water
- Rush casualty to the Hospital at the earliest

HOW SAFE IS YOUR HOME?

OBSERVE FOLLOWING FIRE SAFETY TIPS…

- Never reach any article over a Fire
- Do not fill a burning Stove
- Do not smoke in bed
- Matches and liquids should be kept away from children reach
- Do not allow any naked flame or heat to come in contact with cooking gas
- Don’t search for matches after opening Gas Stove. Light a match stick and then open the gas knob

IN CASE OF LPG LEAKAGE

- Open all ventilation
- Switch off the main regulator
- Never use a lighted match stick to check leaks
- Do not Switch off or switch on any electrical appliances
- Do not use electric fan to dispel the smell of LPG
- Call the nearest dealer or contact Fire Station or take the gas cylinder to an open ground and diffuse it
- Smell a leak and prevent the fire

ELECTRICAL FIRE HAZARDS

CHECK YOUR HOME FOR:

- Preventing overloading of electrical circuits
- Chafed and old wiring
- Unauthorised connections, broken plugs, switches, etc.
- Fuses of the wrong rating
- Spark
- Defective electrical equipment and wiring

- Artificial fabrics are very prone to catch fire fast. Avoid using nylon fabrics while cooking

- Special care should be taken for stocking of carbonaceous materials and petroleum products

- Ensure safety of your electrical fittings and connections

Hints on Fire Fighting & Fire Prevention

General

- Matches have heads but no brains, when you use their heads, use your brain too
- Tackle a blaze before it starts
- What's burns never returns
- Fire is a good servant but a bad master
- Cleanliness is part of fire prevention
- Fire Prevention is better than fire extinction
- The best way to extinguish a fire is not have it

ACT PROMPTLY FOR BETTER SERVICE

- Contact the nearest Fire Station in case of fire or emergency
- Give correct address and location of the incidence
- Always give way to Fire Appliances
- Do not obstruct fire personnel during fire fighting operation

- Install I.S.I. marked Fire Fighting equipment and ensure proper maintenance
- Learn correct method to operate fire equipments
- All fires start small. Do not hesitate to notify the nearest Fire Station immediately even though there is a small fire


Thank you