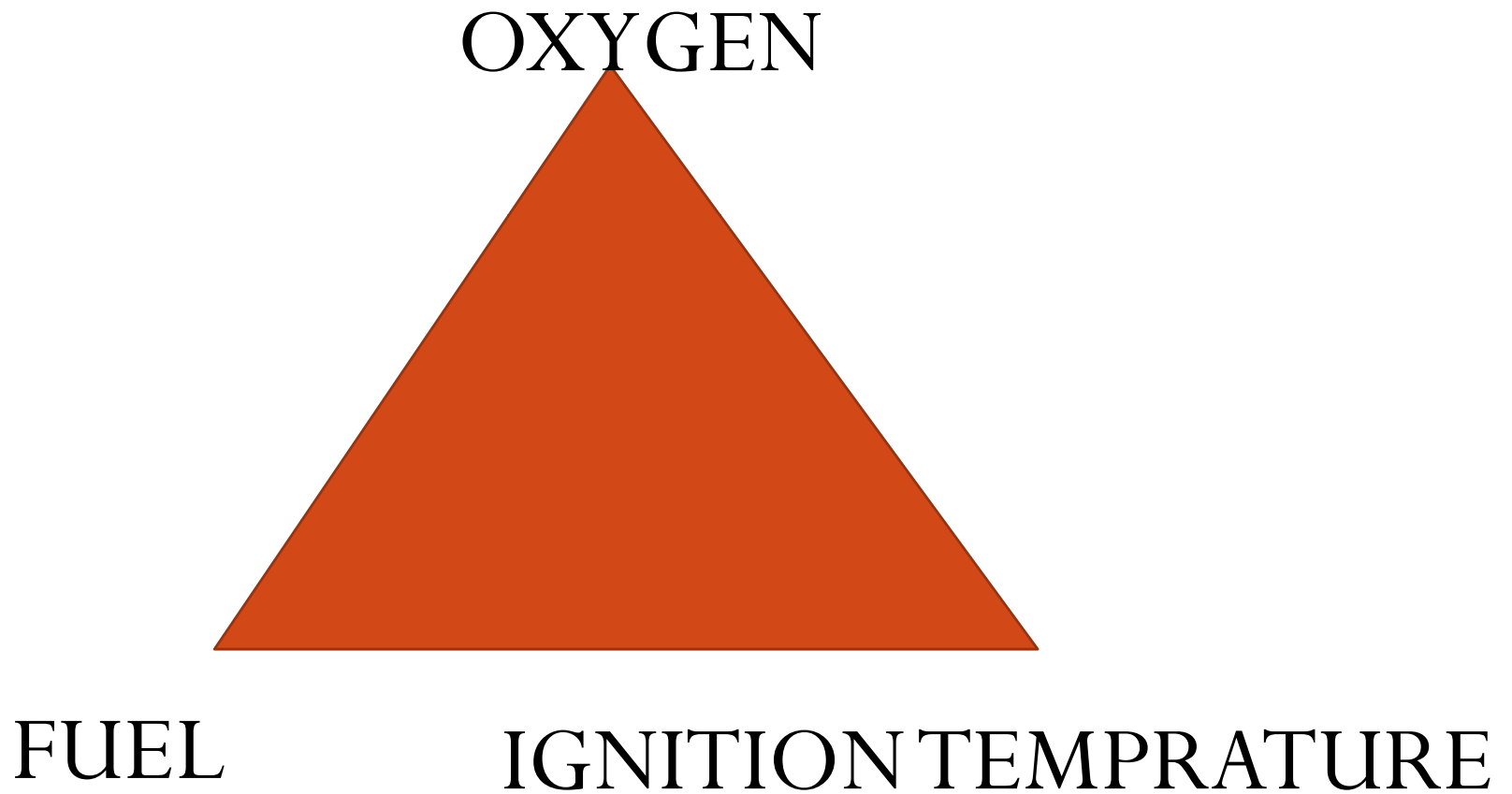


FIRE



THREE THINGS IS NEEDED FOR FIRE



- 1.COMBUSABLE MATERIAL(FUEL)
- 2.IGNITION TEMPRATURE
- 3.OXYGEN

DEFINITION –it is a chemical reaction which takes place with the evaluation of heat and light.

TYPE OF FIRE

‘A’ CLASS.-SOLID FIRE –FIRE

INVOLVING SOLID COMBUSTIBLE
MATERIAL

OF ORGANIC NATURE SUCH WOOD ,
PAPER , RUBBER, PLASTIC, CLOTH ,
WHICH REQUIRES COOLING EFFECT,

B' CLASS-LIQUID FIRE-
FIRE INVOLVING INFLAMMABLE
LIQUID OR LIQUEFIABLE SOLID
SUCH AS PETROL ,KEROSENE ,
GASOLINE,ACID ,SOLVENT ETC.

Slide 6

M1

Yes

MyGalaxy, 07/21/17

C'CLASS-GAS FIRE-(ELECTRIC FIRE)
FIRE INVOLVING INFLAMMABLE
GASES SUCH AS METHANE ,
HYDROGEN, ACETYLENE, LPG, ETC.

‘D’ CLASS-METAL FIRE-
FIRE INVOLVING COMBUSTIBLE
METALS, SUCH AS MAGNESIUM,
SODIUM, ZINC, ALUMINIUM,
POTASSIUM, RADIOACTIVE
MATERIALS ETC.

PRINCIPLE OF FIRE EXTINGUISHMENT

COOLING



1. COOLING-REMOVAL OF HEAT FROM THE BURNING MATERIAL / FIRE AREA



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2.SMOTHERING-CUTTING OF THE SUPPLY OF OXYGEN FROM FIRE AREA



3.STARVATION-REMOVAL OF UNBURNT MATERIAL FROM FIRE AREA





TYPE OF FIRE EXTINGUISHER

1. WATER

2. CO₂

3. FOAM (aluminum sulphate)

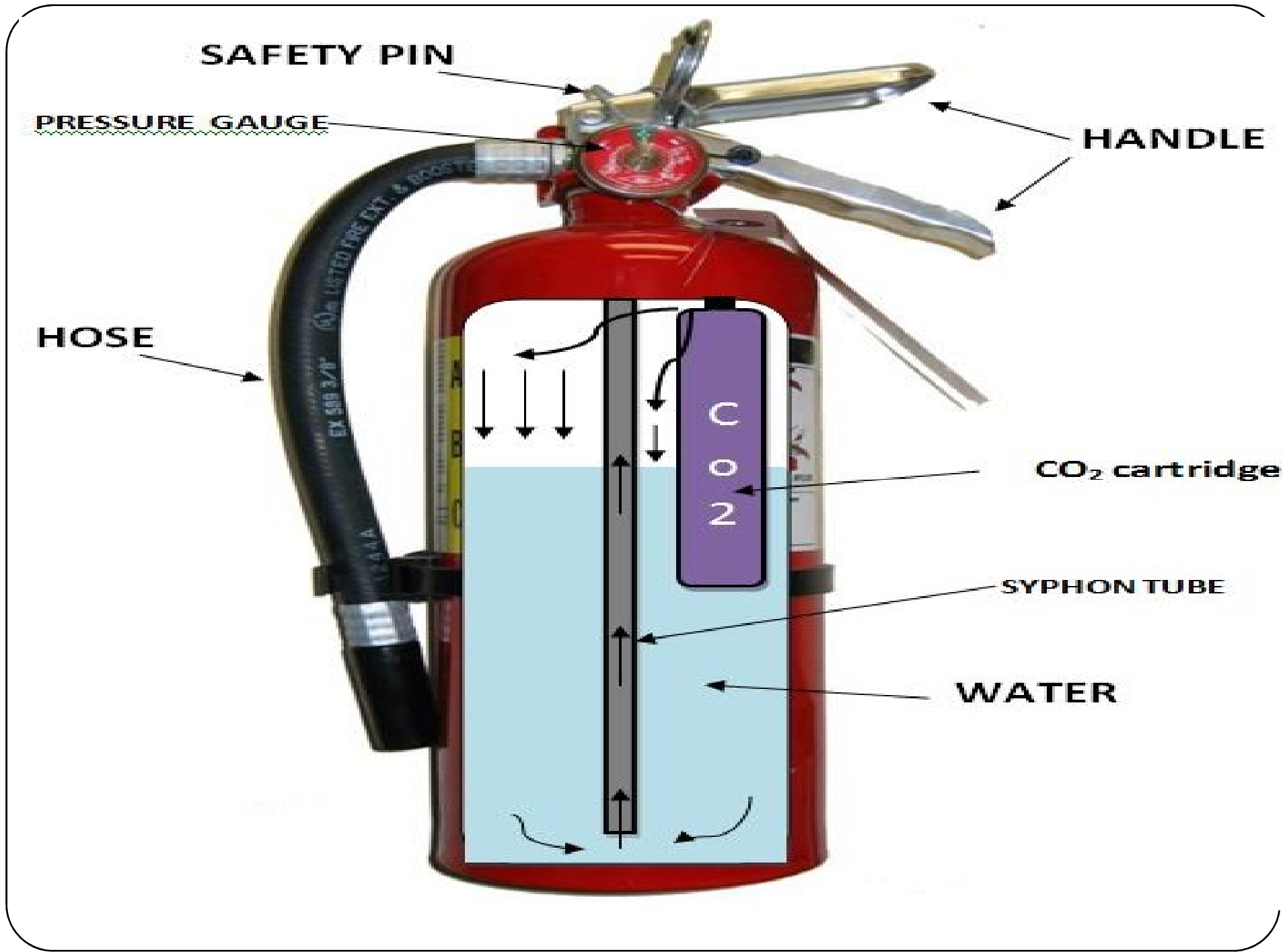
4. SODA



➤ WATER TYPE

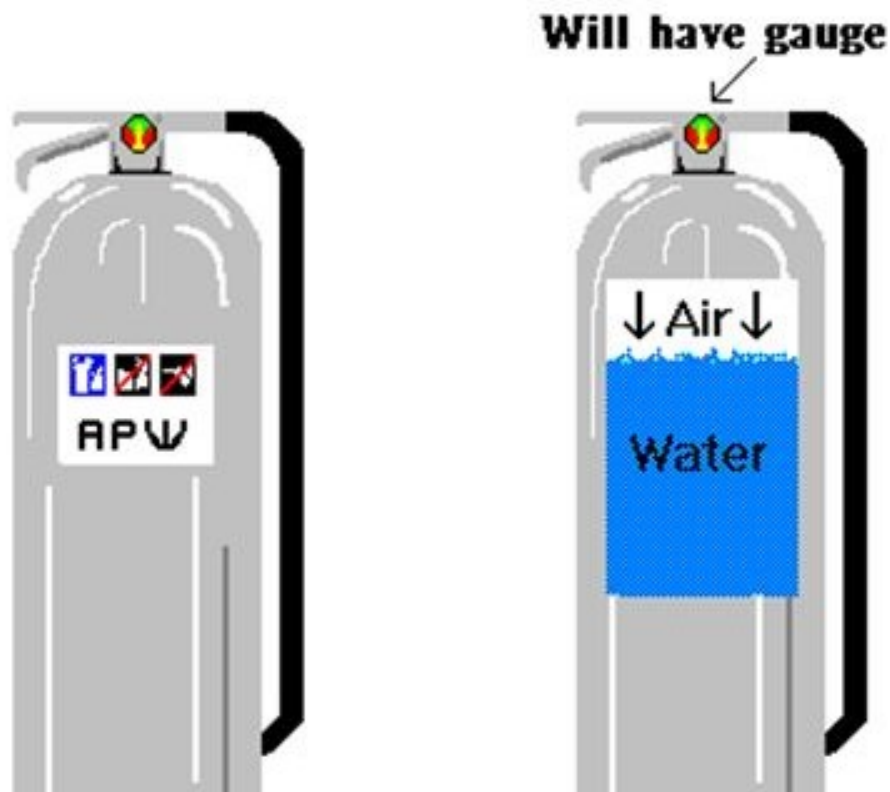
➤ GAS CARTRIDGE

➤ STORE PRESSURE



Types of Fire Extinguishers

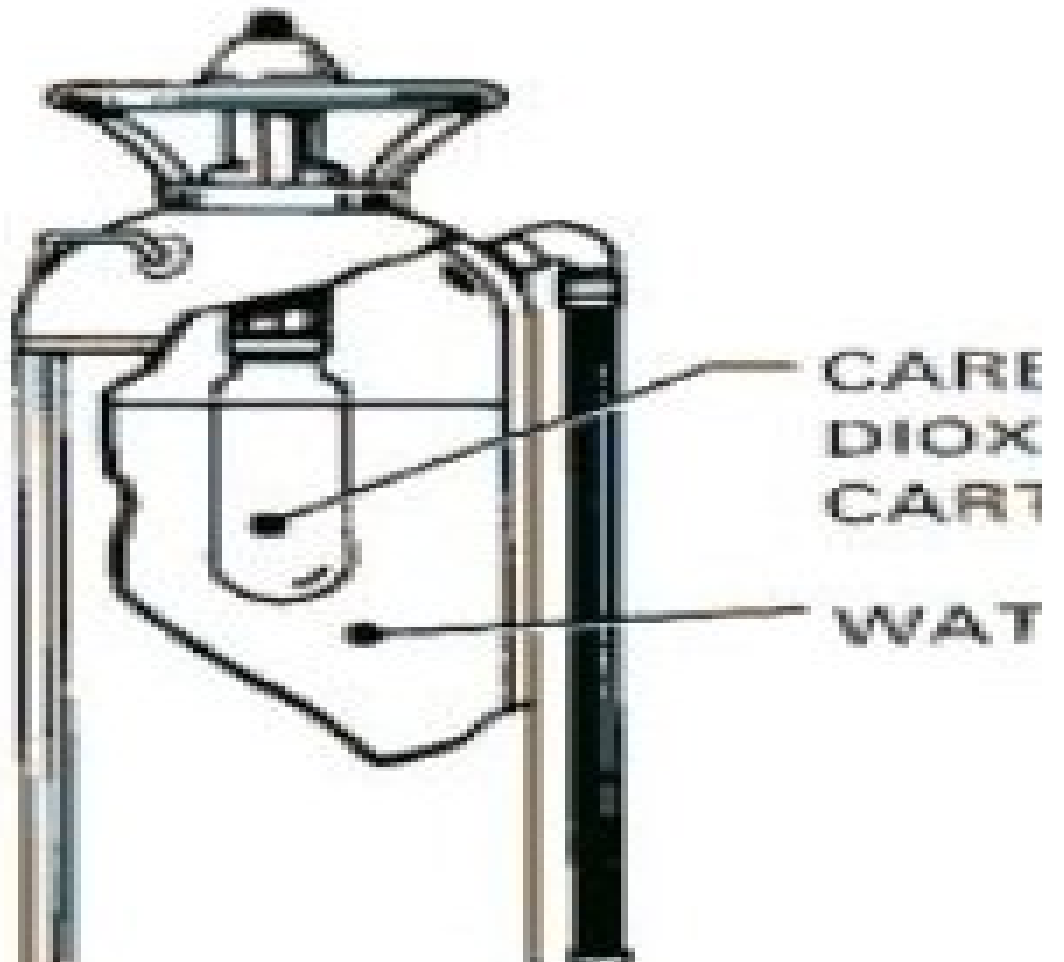
1. Water (APW) Fire Extinguishers



Large silver fire extinguishers are about 2 feet tall and weigh about 25 pounds when full.

APW stands for Pressurized Water.

Filled with water and pressurized air, they are



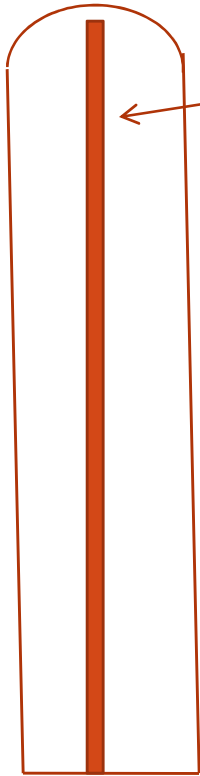
WATER TYPE

GAS CARTRIDGE PERFORMANCE DATA

DATA	WATER
CAPACITY	9 LTR
AVERAGE DISCHARGE TIME	42 Sec
JET LENGTH	6 Meters
WORKING PRESSURE	14 BarS
EMPTY WEIGHT	6.20 Kgs
FILLED WEIGHT	15.20 Kgs
TEST PRESSURE	35 Bars

WATER TYPE

STORE PRESSURE FE PERFORMANCE DATA



CYPHONTUBE

CYLLINDER

DATA	STORE PRESSURE
CAPACITY	9 LTR
AVERAGE DISCHARGE TIME	42 Sec
JET LENGTH	6 Meters
WORKING PRESSURE	14 Bars
EMPTY WEIGHT	4.18 Kgs
FILLED WEIGHT	13.18 kgs
TEST PRESSURE	35 Bars

CO2 TYPE







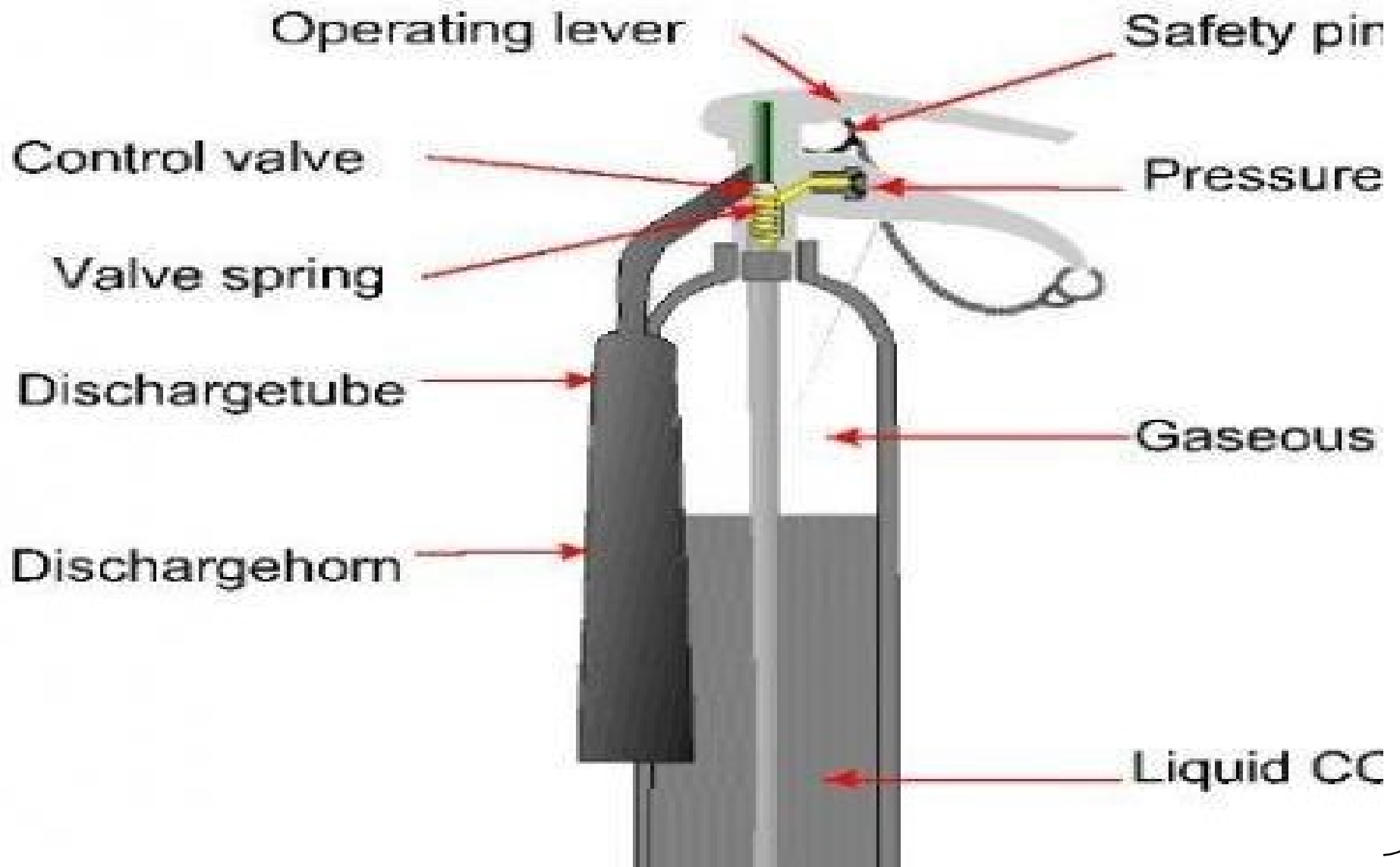


Carbon Dioxide Fire Extinguisher

- Should only use on CLASS B and E fires
- Remove heat elements from fire & separate oxygen from other elements

Note: Class B fire includes : petrol, oil, paint, petrol stations,

Carbon dioxide extinguisher



CARBON DIOXIDE FIRE EXTINGUISHER

CHARACTERISTICS

- It is a gas at standard temperature and pressure
- Carbon dioxide is colourless, non-toxic and odourless
- Heavier than air displaces oxygen (smothering).
- Non conductor of electricity.

- Non-residual gas (clean agent) because they do not leave any residue after discharge.
- Is ideal for sensitive electronics and document.
- Not intended for class A fires as the high pressure cloud of gas can scatter burning materials.
- CO₂ Is not suitable for use on fire containing their own Oxygen sources, metal or cooking media.
- Although it can be rather successful on a

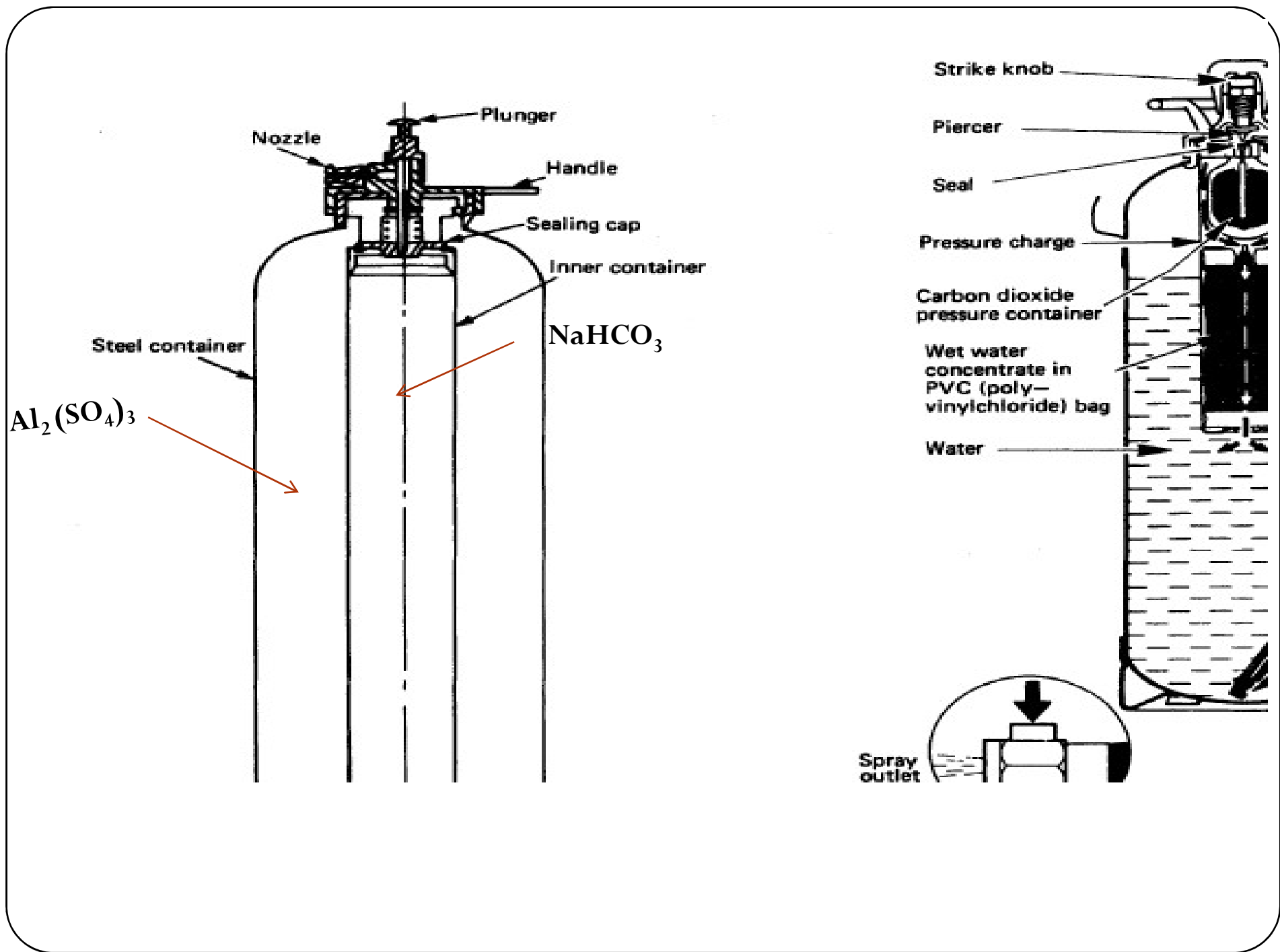
Person on fire.

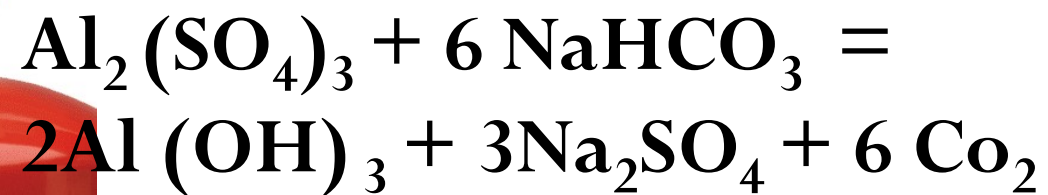
- CO₂ Fire Extiguisher cylinder is made of Manganese steel.

Performance data

Capacity	2 Kgs	3 Kgs	4.5 Kgs
Average discharge time	9.5 Sec	10.5 Sec	12 Sec
Jet length	1 m	2 m	3 m
Working pressure	60-70 Bars	60-70 Bars	60-70 Bars
Empty weight	6.5 kg	8.7 kg	12.1 kg
Filled weight	8.5 kg	11.7 kg	16.6 kg
Test pressure	250 Bars	250 Bars	250 Bars







FOAM EXTINGUISHERS

PORTABLE & TROLLEY

Description	9 L	50 L
Overall Height (cm)	61	61.8
Cylinder Diameter (cm)	19	37
Total Weight (Kg)	13.5	80
Discharge Time (Sec)	28	52
Discharge Hose Length (cm)	61	600
Fire Rating	21A/183B	21A/30B
Working Pressure @ 20C (Bar)	14	14
Temperature Range, Deg. C	0 to +60	0 to +60



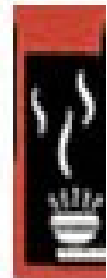
Foam



Extinguishes Fire By:

Removes Oxygen
by Smothering

Removes Heat and
Cools



FOAM TYPE

- MAIN CONTAINER(SODIUM BICARBONATE)-CHE
- INNER CONTAINER(ALUMINUM SULPHATE)-CHE
- APPLIED TO FUEL FIRE AS EITHER AN ASPIRATED (MIXED & EXPANDED WITH AIR IN A BRANCH PIPE)
- NON ASPIRATED FORM TO FORM A FROTHY BLANKET OR SEAL OVER THE FUEL.
- PREVENTING OXYGEN REACHING IT.
- FOAM CAN BE USED TO PROGRESSIVELY EXTINGUISH FIRE WITHOUT FLASHBACK.
- OUTER CONTAINER-WATER
- INNER CONTAINER- Co_2

- AFFF foam fire extinguishers.

Bubble filled with air

- Foam produced by mechanically mixing of foam concentrate , water & air (Special nozzle required).

Foam Type Performance data

Capacity	9 litre
Average discharge time	42 Sec
Jet length	6 m
Working pressure	14 Bars
Empty weight	6.2 kg
Filled weight	15.20 kg
Test pressure	35 Bars



DRY CHEMICAL POWDER

- THIS IS A POWDER BASE AGENT THAT EXTINGUISHES BY SEPARATING THE FOUR PARTS OF THE FIRE TETRAHEDRON.
- IT PREVENTS THE CHEMICAL REACTION INVOLVING HEAT FUEL & OXYGEN AND HALTS THE PRODUCTION OF FIRE SUSTAINING “FREE-RADICALS” THUS EXTINGUISHING THE FIRE.
- THERE ARE DIFFERENT TYPES OF DRY CHEMICAL POWDER

SODIUM BICARBONATE

- SODIUM BICARBONATE, "REGULAR" OR "ORDINARY" USED ON CLASS B AND C FIRES.
- IN THE HEAT OF A FIRE. IT RELEASES A CLOUD OF CARBON DIOXIDE THAT SMOTHERS THE FIRE
- WHITE OR BLUE IN CLOUD.

MONO-AMONIUM PHOSPHATE

- MONO-AMONIUM PHOSPHATE ALSO KNOWN AS 'TRI-CLASS' MULTI PURPOSE OR "ABC" DRY CHEMICAL
- MORE CORROSIVE THAN OTHER DRY CHEMICAL AGENTS, PALE YELLOW IN COLOUR.
- USED ON CLASS A, B AND C FIRES.

POTASSIUM BICARBONATE

- POTASSIUM BICARBONATE (PURPLE-K), USED ON CLASS **B** AND **C** FIRE.
- ABOUT TWO TIMES AS EFFECTIVES ON CLASS **B** FIRE AS SODIUM BICARBONATE.
- PREFERRED DRY CHEMICAL AGENT OF THE OIL AND GAS INDUSTRY.
- COLOURED VIOLET TO DISTIGUISHE IT.

POTASSIUM BICARBONATE & UREA

- USED ON CLASS B AND C FIRES.
- MORE EFFECTIVE THAN ALL OTHER POWDERS DUE TO ITS ABILITY TO DECREPITATES(WHERE THE POWDER BREAKS UP INTO SMALLER PARTICLES .
- GREY IN COLOR.

MELT-L-KYL/PYROKIL

MELT –L-KYL/PYROKIL IS A SPECIAL VARIATION OF SODIUM BICARBONATE.

- USED FOR FIGHTING PYROPHORIC LIQUID FIRES
- IT IS ALSO CONTAINS SILICA GEL PARTICLES.
- THE SODIUM BICARBONATE INTERRUPTS THE CHAIN REACTION OF THE FUEL AND THE SILICA SOAKS UP ANY UP ANY UNBURNED FUELS, PREVENTIN CONTACT WITH AIR.

DRY POWDER FOR METAL FIRE.

A- SODIUM CHLORIDE(SUPER-D,MET-L-X) CONTAINS SODIUM CHLORIDE SALT WHICH MELTS TO FORM AN OXYGEN-EXCLUDING CRUST OVER THE METAL.

- USEFUL ON MOST ALKALI METALS INCLUDING SODIUM AND POTASSIUM AND OTHER METALS INCLUDING MAGNESIUM, TITANIUM, ALUMINUM, ZIRCONIUM.

B-TERNARY EUTECTIC CHLORIDE (TEC) CONTAINS CHLORIDES OF BARIUM, SODIUM AND POTASSIUM WHICH MELTS AND FORMS

FUSED SKIN OVER BURNING METAL AND
ABSORB HEAT AND CUT OFF OXYGEN TO FIRE.

C-GRAPHITE BASED(G-PLUS,G-1,LITH-X,
PYROMET OR METAL FIRE EXTIGUSHER)
CONTAINS DRY GRAPHITE THAT SMOTHERS
BURNING METALS.

- DEVELOPED,DESIGNED FOR MAGNESIUM,WORKS ON OTHER METALS AS WELL.
- CAN BE USED ON VERY HOT BURNING METAL FIRES SUCH AS LITHIUM.
- WILL NOT STICK TO AND EXTIGUISH FLOWING OR VERTICAL LITHIUM FIRE.
- ACTS AS A HEAT SINK TO DISSIPATE HEAT AS WELL

AS SMOTHERING THE METAL FIRE.

D-SODIUM CARBONATE BASED(NA-X)

- USED WHERE STAINLESS STEEL PIPING AND EQUIPMENT COULD BE DAMAGED BY SODIUM CHLORIDE BASED AGENTS TO CONTROL SODIUM, POTASSIUM, AND SODIUM –POTASSIUM ALLOY FIRE.
- LIMITED USE ON OTHER METALS. SMOTHERS AND FORMS A CRUST.



(INTIME) FIRE EXTINGUISHER HOSE MP 20BAR



CONTROL THE FIRE INTIME

DRY POWDER FIRE EXTINGUISHER
STORED PRESSURE TYPE

A
B
C



TYPE 'A' FOR
USE ON PAPER,
WOOD, CLOTH,
PLASTICS ETC.
TYPE 'B' FOR
USE ON PETROL,
OIL, PAINTS, SPIRIT,
CHEMICALS ETC.
TYPE 'C' FOR
USE ON COOKING
& WELDING GAS,
ELECTRICAL FIRE ET.

For BIS Certification details see web site www.bis.org.in

FIRE





BASE / ROOT



DRY CHEMICAL POWDER





CARBON DIOXIDE
EXTINGUISHER

Foam

WET CHEMICAL

Water
Spray

FIRE EXTINGUISHER
6 LITRE WATER
1000

HOLD UPRIGHT
PULL OUT SAFETY PIN

AIM AT BASE OF FIRE
FROM A MINIMUM
DISTANCE OF 1 METRE

SQUEEZE LEVER

A B

NEVER PRESS PROTECTED FIRE
RATING TAGS
DO NOT USE IF PRESSURE INDICATOR
ENTERED AND SIGHTED
DO NOT USE OUTSIDE SPECIFIED
TEMPERATURE RANGE

FIRE EXTINGUISHER
1000

1. Use upright.
Remove safety pin
and steady base

2. Direct hose nozzle
at base of fire

3. Operate handle to
commence discharge
followed by manual

A B C

Intended for use on cooking oil fires
Use on industrial gas on electrical
equipment up to 1000 V at 1.0 distance

FIRE EXTINGUISHER
6 LITRE WATER
1000

HOLD UPRIGHT
PULL OUT SAFETY PIN

AIM AT BASE OF FIRE
FROM A MINIMUM
DISTANCE OF 1 METRE

SQUEEZE LEVER

A

PASSED 30KV
CONDUCTIVITY OF
DISCHARGE TEST

DO NOT USE ON LIQUID FIRES
DO NOT USE IF PRESSURE
INDICATOR ENTERED AND SIGHTED
DO NOT USE OUTSIDE
SPECIFIED TEMPERATURE RANGE





FIRE BLANKET

- FIRE BLANKET-ASBESTOS, GLASS FIBRE OR WOOL FIBRE.
- CLOTH FIRE

FIRE EXTINGUISHING BALL(AFO)

- GRANADE STYLE EXTINGUISHER
- MANUALLY OPERATED BY THROWING OR ROLLING.

SELF DISTRUCT WHEN CONTACT WITH FLAME.



ACTIVE INTO 3 TO 10 SEC

DIA-152 mm

1.3 KG

- DISPERSING A CLOUD OF DRY CHEMICAL POWDER OVER THE FIRE WHICH EXTIGUISH THE FLAME.
- THE COVERAGE AREA IS ABOUT 5 SQUARE METERS.
- LOUD NOISE UPON DEPLOYMENT.
- NO MAINTAINANCE IS REQUIRED (5 YRS)
- 138 db NOISE
- MONO AMMONIUM PHOSPHATE
- TRIGGER OR ACTIVATOR EXPOSE TO FLAME (FEW SECOND TO TAKE CASE TO BURST OPEN)

- A CLOUD OF CHEMICAL POWDER SHOWN AFTER BURST.
- ABC Dry Chemical

SUITABILITY OF FIRE EXTINGUISHING MEDIA

CLASS 'A'

- WATER

- DRY CHEMICAL

CLASS 'B'

-MECHANICAL FOAM

-DRY CHEMICAL

-CARBON DI-OXIDE

CLASS 'C'

-CARBON DIOXIDE

-DRY CHEMICAL

CLASS 'D'

-SPECIAL DRY POWDER