FACE OFF
KV FIRE News
INSPIRED BY FIRE

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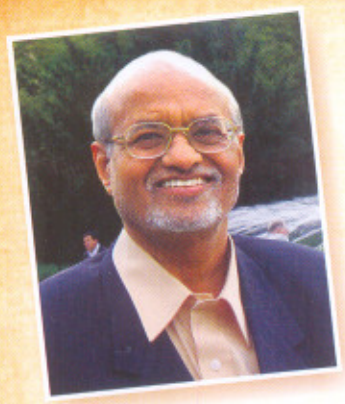
From The Editor Desk



Wish you all Fire Safe Year..

Financial year is over, Indian economy done well to grow at a reasonable GDP inspite of draught and the adverse global scenario.

However we cannot agree at this stage with Three Idiots and say ALL IS WELL. With the growing naxalites, high inflation rate, and the commotion that is being created by politicians for all issues be it woman reservation or IPL, safety and security of common man is jeopardized.

We had discussed in last issue, Fire in IOCL storage tank farm at Jaipur and the pathetic state of our preparedness to meet such challenges. Unfortunately nothing seems to have changed.

Many fires have been witnessed recently in office buildings, shops, residences and factories. We have not learnt any lesson from past.

We can avoid loss of human lives and save properties worth crores if attention is given and findings of past incidents are reviewed for action.

We have to understand and accept that blaming government or the fire brigade is not solution to the problem. Issue is,

TO BE SERIOUS ABOUT PROTECTING OURSELVES & OUR NATIONAL PROPERTIES FROM CALAMITIES?

We, as a nation, are casual & carefree in our approach and attitude.

It is time to take stock of the situation and act, some urgent steps :

- Provide adequate resources and training to fire brigade.
- Equip them with new generation extinguishing chemicals - Wetting agents, CLASS - A foam and encapsulating agent.
- Increase awareness of fire safety among all individuals at all levels.
- Change our casual attitude of Chalta Hai or Aisa to roj thodi hota hai? to a professional thinking for prevention.

We sincerely hope that our decision makers and society, will now understand the gravity of situation and act.

Sabadra

- H. M. Sabadra
M.D. (KV Fire Chemical)

CLASS A FIRES RISKS & SOLUTIONS

Fires are classified as follows :

American	European / Australian / Asian	Fuel / Heat source
Class A	Class A	Ordinary combustibles- wood, coal, rubber, plastics, textiles, tyres etc
Class B	Class B	Flammable liquids- diesel, petrol, alcohol
	Class C	Flammable gases- LPG, LNG, methane
Class C	Class C	Energised Electrical equipment
Class D	Class D	Combustible metals – Mg, Ti, Na, Li, K
Class K	Class F	Cooking oil, fatty oils

Characteristics of Class A Fire :

Carbogenous substances are solids, made of carbon chain and generally contain other elements like Nitrogen, Hydrogen, Oxygen, Phosphorus, Sulphur, Halides etc; naturally occurring or of synthetic origin

These substances are slow to catch fire in comparison to liquids and gases of Class B as the activation energy required is higher. Once fire has initiated, heat released is sufficient to sustain the fire and spread it at rapid rate. Class A fire burns with a glowing ember.

It is a three dimensional in nature (deep seated), unlike other fires which are two dimensional (surface). Fire spreads inside the bulk of the fuel.

Extinguishment of Class A Fires :

Wood, cloth etc will start burning on reaching their ignition point. Once combustion begins heat released will sustain the fire which can quickly grow out of control.

Principle of fire extinguishment is to break the fire tetrahedron by any one of the following method :

Removal of heat : Water is widely used extinguishing agent for Class A fires due to its high heat removing capacity, latent heat of vapourisation is 2260 kJ/kg

Cut off oxygen : By applying **Class A Foam** on the burning surface.

Fuel removal : Generally not practicable or possible. Partly isolation can be done.

Suppression : Chemical reaction can be interrupted by extinguishing agent, **Dry Powder Mono Ammonium Phosphate** base.

How to increase efficiency of Fire Extinguishment ?

Use of Wetting Agent :

Main drawback of the water is its high surface tension, which prevents its spreading, penetration & wetting capacity.

Addition of wetting agent reduces the surface tension of water from 72 dyne/cm upto 33 dynes/cm, thereby improving its spreading and wetting efficiency leading to enhanced fire fighting capability by many folds.

NFPA has developed standard NPFA 18 & 18 A for establishing performance criteria of such agents.

Fires in Forest, large warehouses, wooden structures, tyres storage areas etc requires huge quantity of water, which may not be available at the place of fire so it is necessary to increase the efficiency of limited water available by using wetting agent.

Many new generation wetting agents are developed and are now available.

Use of Class A Foam :

Class A Foam is one such additive to be used between 0.1 to 1 % level, which improves water spreading & penetration by reducing surface tension and generates foam of very good adherence with long bubbles stability. Fire extinguishment is much faster due to rapid cooling and cutting off oxygen. Class A Foam is very effective in fighting fires involving forest, coal, paper. plastic, tyre, textile etc.

Use of Encapsulating Agent :

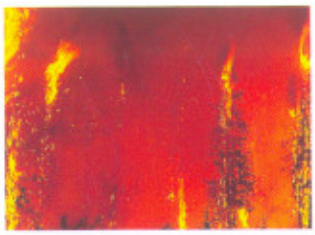
Development of encapsulation technology agent like F-500 where molecular structure is designed in such a way that active site on the molecule trap fuel molecules, heat, dust particle etc. so heat removing capacity of water is increased 15 -18 times. It also helps in reducing smoke and prevents re-ignition.

(Read more about it in our next Technical bulletin - QUEST)

Use of efficient MAP Powder :

Mono ammonium phosphate based dry chemical powders are widely used to prevent fire propagation by free radicals. Advantage of MAP based dry powders is that the powder melts & decompose at low temp to form sticky layer of orthophosphate on the burning surface which cuts off oxygen and prevents re-ignition. MAP powder can be used on B, C classes and light metal fires also.

Comparison of Fire Rating of Extinguisher of a given capacity will indicate the Fire Fighting capabilities of each type of agent along with the equipment.



Present Scenerio

We in India still use SBC powders to protect residences, offices, commercial complexes, hospitals, schools which have major fire risk of Class A fires! But it may please be noted that SBC powder has very limited fire fighting capability, that too only for Class B fires and it is not suitable for fighting Class A fires. World over SBC base powders are withdrawn and are being used only for trials, training & testing; whereas ABC powder extinguishers are used for protection against Class A fire. Cost consideration and lack of awareness may be the reasons that we in India still use SBC extinguishers.

In India fire brigades are only dependent on water for fire fighting against Class A fires.

An Appeal

Create awareness for change over from SBC to ABC type extinguisher for Class A fires in offices & commercial complex.

Encourage Fire Brigades to adopt new technologies like most fire brigades world over have done, to use Class A foam & wetting agents to fight Class A fires thereby achieve fast extinguishment with much less consumption of water.

Use of encapsulating agents will help fire brigade personnel to overcome smoke and toxic materials menace greatly there by provide safety, better visibility and higher fighting efficiency.

The Message Is — **Provide resources to fire brigade to adopt & absorb new technology products for fire safe world.**

FACE OFF

NATURAL CALAMITIES

Nature has shows its fury with earthquakes, eruption of volcano, cyclone, heavy rains & global warming.

Its high time that each one of us be aware of this problems and contribute individually and collectively towards protection of environment by taking due care such as conservation of natural resources.

Balance between development and conservation is need of the hour.

We at K V FIRE are continuously working towards protecting the environment. Our focus is to introduce new generation extinguishing agents which are :

CLEANER, GREENER & POWERFUL

ONE MORE MILE STONE

WE ARE PROUD TO ANNOUCE THAT OUR MANUFACTURING FACILITY IS NOW CERTIFITED UNDER OHSAS 18001 BY DNV.

WE ARE ONCE AGAIN THE FIRST ONE IN THIS FIELD TO ACHIEVE IT.

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