Condensed Aerosol Based Fire Extinguishing System (CAFES)

India is a signatory country on Montreal protocol-1987, and ban on production and use of Halon is applicable for our fire safety systems. Several Halon alternatives are being developed worldwide. Condensed aerosol based fire extinguishing system (CAFES) has emerged as the most efficient Halon alternative as it is three times more effective than Halon-1301 on weight to volume bases, modular, simple, non-toxic, and environmentally safe.

Basically, CAFES is comprised of igniter, aerosol forming composite (AFC) and cooling pallets composite (CPC) housed in suitable casing. When the actuation signal is sent to igniter of CAFES. Igniter burns booster composite and in turn AFC, and finally produces micron size aerosols of potassium carbonate/bicarbonate and hot gases, which are cooled by CPC and the combustion products (aerosols and gases) come out of CAFES. In the fire zone, produced aerosols inhibit the fire sustaining free radical chain reaction of fuel and thereby extinguishes the fire.

Indigenously designed & developed CAFES of capacity 0.1 and 1.0 kg AFC have been tested by CFEES as per relevant performance parameters of international standards. The current technology for transfer involves complete details on process of preparation of AFC & CPC chemical composites, their blocks & tablets, design of igniter and various components of casings of CAFES, housing protocols and clamping arrangements.