



COMPATIBILITY OF ALKALINE BASED DRY CHEMICAL AGENTS WITH WET CHEMICAL AGENTS PROTECTING COMMERCIAL COOKING OPERATIONS

Since November 21, 1994 (the effective date for UL 300) only wet chemical systems have been manufactured with UL listings for the protection of commercial cooking operations. Shortly afterwards, a TIA (Tentative Interim Amendment) was issued for the 1994 Edition of NFPA 10 allowing the use of wet chemical extinguishers in lieu of 40B:C sodium bicarbonate (regular) or potassium bicarbonate (Purple-K) extinguishers for the protection of commercial cooking operations. Even though the UL 300 standard and the acceptance of wet chemical Class K extinguishers has been in effect for nearly a decade, there remains some confusion regarding the compatibility of wet chemical agents with alkaline based dry chemical agents. In the past, sodium bicarbonate and potassium bicarbonate dry chemicals were specified for use on cooking media. All cooking media, be it animal or vegetable, liquids or solids, contain saturated fats or free fatty acids. When an alkaline based extinguishing agent is applied to the heated saturated fats, a reaction occurs called "saponification". The reaction forms a soapy foam on top of the surface that smothers the fire and contains the flammable vapors and the hot cooking medium. Both the dry chemical agents and the wet chemical agents (being alkaline based) will cause the same reaction. The wet chemical, being applied as a fine mist, has the added advantage of cooling the cooking medium and lowering the temperature, making the wet chemical agents more effective. Since UL 300 was made effective, only wet chemical systems comply with the newest test criteria. Likewise, only wet chemical extinguishers comply with the Class K requirements of ANSI/UL 711. ABC dry chemical (monoammonium phosphate) is acidic in nature and will not saponify when applied to burning cooking media. It may even be counterproductive when used after alkaline agents have been used by disturbing or removing the soapy foam from the surface which could cause reignition. While it is our opinion that in the interest of better fire protection, only UL 300 listed systems and Class K listed fire extinguishers should be used for the protection of commercial cooking operations, there are no compatibility issues with the use of alkaline-based dry chemical agents with wet chemical agents on the same cooking media hazard.