



USE OF ABC DRY CHEMICAL IN THE VICINITY OF AIRCRAFT

Amerex Corporation continues to receive inquiries regarding the use of ABC multipurpose dry chemical extinguishers around airport ramps, fueling areas, maintenance areas, and on vehicles operating in these zones.

THIS IS NOT ALLOWED! For decades, it has been a well-established standard to avoid using ABC multipurpose dry chemical extinguishers inside or near aircraft. This is due to the corrosive nature of the extinguishing agent, which poses a significant risk to aircraft components when exposed and not thoroughly cleaned up after a discharge. Although the guidance against using ABC dry chemical extinguishers in aviation settings originates from publications dating back several decades, the rationale remains highly relevant today.

ABC multipurpose dry chemical extinguishing agents exhibit higher acidity and corrosiveness compared to other dry



chemical types. The acidic properties of monoammonium phosphate become increasingly reactive when exposed to moisture or humid environments. This enhanced acidity can result in pitting corrosion on certain untreated metal surfaces. This corrosion can be difficult to detect, especially within crevices or inaccessible areas of an aircraft. If left unidentified, such deterioration poses a significant risk, potentially leading to structural or electrical failures during critical moments.

This precautionary measure is not only a matter of best practice but also a matter of safety. Most important, this practice is enforced through standards published by the National Fire Protection Association (NFPA) as exhibited below.

Please read our Tech Tip 46 on how these NFPA publications are also supported by NFPA 10, Standard for Portable Fire Extinguishers and the IFC - International Fire Code.

► **NFPA 407 Standard for Aircraft Fuel Servicing, 2022 edition**

4.1.10.3* ABC multipurpose dry chemical fire extinguishers (ammonium phosphate) shall not be placed on aircraft fueling vehicles, airport fuel servicing ramps or aprons, or at airport fuel facilities that are located within 150 m (500 ft) of aircraft operating areas.

A.4.1.10.3 Multipurpose dry chemical (ammonium phosphate) fire-extinguishing agent is known to cause corrosion to aircraft components. Although the agent is capable of extinguishing fires on or near aircraft, it is likely that the agent will spread to other, uninvolved aircraft, causing damage from corrosion.

► **NFPA 410 Standard for Aircraft Maintenance, 2025 edition**

10.2 identifies all of the aircraft maintenance operations that require fire extinguishers.

A.10.2 Multipurpose dry chemical (ammonium phosphate) fire-extinguishing agent is known to cause corrosion to aircraft components and should not be used. Although the agent is capable of extinguishing fires on or near aircraft, it is likely that the agent will spread to other, uninvolved aircraft, causing damage from dry chemicals and therefore are easier to clean from aircraft parts and the recommended option. Clean agents are an option for the protection of various hazards and will meet minimum ratings requirements for sections that do not require dry chemical.

► **NFPA Fire Protection Handbook, 21st Edition, 2023; Section 2, Chapter 7, "Theory of Fire Extinguishment" Extinguishment with Dry Chemical Agents**

One reason that dry chemical agents other than monoammonium phosphate are popular has to do with corrosion. Any chemical powder can produce some degree of corrosion or other damage, but monoammonium phosphate is acidic and corrodes more readily than other dry chemicals, which are neutral or mildly alkaline. Furthermore, corrosion by other dry chemicals is stopped by moderately dry atmosphere, while phosphoric acid has such a strong affinity for water that an exceedingly dry atmosphere would be needed to stop corrosion.

ABC dry chemical is not the appropriate agent for fire protection around aircraft.

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