



Firefighting Foams: Fire Service Roadmap

Background: Aqueous Film Forming Foam (AFFF) has been the industry standard for combatting liquid fuel fires and hazards for almost 50 years. AFFF is a water-based solution that contains a fluorinated, film forming surfactant (per- and poly- fluoroalkyl substances (PFAS)) to seal the fuel surface during suppression/ extinguishment.

- PFAS are a family of human-made chemicals in products used by consumers and through various industries.
- Some PFAS are described as forever chemicals that do not naturally breakdown in the environment and/or in the human body.
- Some PFAS have emerged as contaminants of concern.
- Some PFAS have been associated with human health and ecological effects.

As a result, the ability to use AFFF to extinguish Class B fires continues to be greatly restricted and already been banned in numerous States in the United States and in countries across the world such as Australia. Recently, Federal and State authorities have implemented health and environmental regulatory actions for PFAS and PFAS-containing AFFF. These regulations will ultimately impact, if not eliminate the production, distribution, and use of legacy AFFF in upcoming years.

Project Goal: The overall goal of this project is to enhance firefighter safety and health by developing a strategic fire service roadmap to effectively and efficiently transition from fluorinated foam (i.e., AFFF) usage to a suitable, environmentally friendly, non-toxic, and effective alternative.

Summary Observations: The overall project tasks included:

- Reviewing and summarizing the current level of knowledge on the various aspects associated transitioning to a fluorine-free foam.
- Establishing recommended best practices for acquisition, operations, handling, disposal, and other tasks.
- Coordinating a unified voice to support a fire service national strategy and policies on firefighting foam.
- Facilitating stakeholder and researcher interaction and engagement for all key issues.
- Identifying knowledge gaps and identify future research elements to serve the needs of fire service.
- Stimulating dialogue between ongoing research efforts across all areas of focus (e.g., fire control, health & wellness, environmental, etc.).

The roadmap document is based on the information available at the time of the program. The roadmap and associated documentation have been assembled in a systematic path that works through knowing the current regulations and when to make the transition, cleaning of equipment and disposal of effluents and legacy concentrates, foam selection and implementation, minimizing firefighter exposures, and how to handle foam discharged from a cleanup and documentation perspective. The information has been assembled in separate Annexes of the roadmap report (www.nfpa.org/foamroadmap) which are listed below.

- A) Understanding current regulations and knowing when to make the transition
- B) Firefighting foam tutorial
- C) Selection of an acceptable AFFF alternative
- D) Cleaning of equipment and definition of acceptable levels
- E) Disposal of current AFFF products (concentrates and solutions)
- F) Implementation of the selected alternative
- G) Health concerns and minimizing firefighter exposures
- H) Post fire / post discharge cleanup and documentation
- I) Workshop summary
- J) Project poster
- K) References

LEARN MORE: Download the final report [here](#).

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