



شركة المصنع السعودي لأجهزة الإطفاء
SAUDI FACTORY FOR FIRE EQUIPMENT Co.

AFFF

AR-AFFF

FFFP

AR-FFFP

Technical Data Sheet FOAM CONCENTRATES



UL FILE NO. EX6069



We are very proud to be a vital part of the development of Saudi Arabia and Middle East since **1983** in fire protection industry.



ABOUT SFFECO

SFFECO is an ISO9001 certified manufacturing company by BRE Global, is a market leader and specialize in manufacturing of fire-fighting equipment in the world. SFFECO has a long standing established reputation for pioneering innovation ever since its foundation in 1983.

SFFECO has its own state-of-the-art manufacturing plants in Riyadh and Dubai producing end-to-end range of products for the fire fighting industry matching international standards in quality.

SFFECO with its innovative approach provides the entire gamut of products that caters to the needs of the Fire Protection and Fire Fighting industry. This makes SFFECO a one-stop-shop for customers, fulfilling their end-to-end needs in products, solutions and services for the industry.

SFFECO continually expands upon its knowledge and services to keep its clients updated with the latest Fire Fighting Technology in the world. The product range manufactured by SFFECO confirms and holds approval to international standards.

SFFECO Reputation for Quality & Reliability has made its trusted name through out G.C.C & other Countries Worldwide for its Products. SFFECO is not only rich in History & Quality, but on continuous improvement, & development of product features.

SFFECO is a member of National Fire Protection Association (NFPA), British Standards Institution (BSI), Fire Protection Association (FPA), as well as Approved Vendor to Many Governmental, & Semi - Governmental Sectors in G.C.C.

SFFECO Vision to develop with Wisdom & Prosper in Harmony, and continue to be the leader in the Fire Protection industry providing excellent service & superior products for many years to come.



ABOUT SFFECO FOAM CONCENTRATES

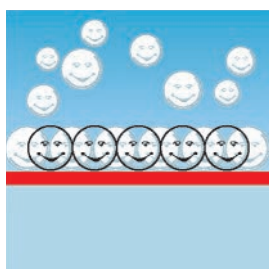
SFFECO is a manufacturer for Foam concentrates. Our UL Listed Foam Concentrates represents a major advancement in foam technology for effective extinguishment of class A and class B fires, as low and Medium expansion foam.

It can be used with standard and conventional low / medium expansion foam making equipments with fresh / sea / brackish water, either as a solution or through foam induction systems. This unique quality makes it suitable for use in special applications like crash Tenders / Monitors / Foam chambers Air-aspirating and nonaspirating sprinkler heads or spray nozzles / Air-aspirating foam nozzles/ portable foam Extinguishers etc.

It applied into fixed water spray or sprinkler installations for protection of stores, ware-houses, tanker loading areas and other local risks involving a spilled fuel fire, has been found extremely effective. Various crude oils, gasoline, diesels fuels, aviation fuels, etc. its excellent wetting characteristics make it suitable in combating class A fires as well. It can be used with dry chemical extinguishing agents without regard to the order of application to provide even greater fire protection capability.

MODEL	DESCRIPTION
SF-KSA AR-AFFF 1x3 C6	ALCOHOL RESISTANT AQUEOUS FILM FORMING FOAM CONCENTRATE
SF-KSA AR-AFFF 3x3 C6 ECO PLUS	
SF-KSA AR-AFFF 3x6 C6	
SF-KSA AR-AFFF 1x1 C6	
SF-KSA AR-FFFP 3x3	ALCOHOL RESISTANT FILM FORMING FLUORO PROTEIN FOAM CONCENTRATE
SF-KSA AR-FFFP 3x6 C6	
SF-KSA AFFF 1% C6	AQUEOUS FILM FORMING FOAM CONCENTRATE
SF-KSA AFFF 3% C6	
SF-KSA AFFF 6%	
SF-KSA AFFF 3% C6 FREEZE PROTECT	
SF-KSA FP 3%	FLUORO PROTEIN FOAM CONCENTRATE
SF-KSA FP 6%	
SF-KSA FFFP 3%	FILM FORMING FLURO PROTEIN FOAM CONCENTRATE
SF-KSA FFFP 6%	
SF-KSA FLUORINE FREE AR-FF 3x3	FLUORINE FREE AR SYNTHETIC FOAM CONCENTRATE

ADVANTAGES OF FOAM



Produces a cohesive blanket



Flows freely



Has slow drainage rate



Has cooling effect



Resists the spill



Resists heat

AQUEOUS FILM FORMING FOAM CONCENTRATE

AFFF

1% 3% 6%



DESCRIPTION

Our AFFF (Aqueous Film-Forming Foam Concentrates) are superior in quality and can be used at the specified concentration to extinguish fires of non-polar hydrocarbon fuels. This extinguishing agent is suitable for use with most types of proportioning and discharge equipment. AFFF foam concentrates are designed for rapid fire knockdown by producing a thin aqueous film which helps to prevent the release of fuel vapors. The foam blanket from which the film forming liquid drains separates oxygen from the fuel surface, extinguishes the fire and prevents re-ignition.

AFFF provides excellent penetrating and wetting qualities when used on Class A fires also. The water content of the foam provides a cooling effect. The aqueous film is produced by the fluorocarbon surfactant reducing the surface tension of the foam solution to a point where the solution can be supported by the surface tension of the fuel. This is important when extinguishing deep-seated fires in wood, paper, rubber and other ordinary combustibles.

FEATURES

- ❖ Formulated for use with wide range of discharge devices and proportioning system.
- ❖ Suitable for use with both aspirating foam and standard water fog nozzles.
- ❖ If inadvertently frozen, thawing will render product completely serviceable again.
- ❖ Suitable for use with fibre glass, polyethylene or stainless steel.
- ❖ Suitable for use with either fresh or salt water.
- ❖ Suitable for use with deluge or closed head foam water sprinkler systems
- ❖ Suitable for use with siliconised dry chemical extinguishing agents
- ❖ UL recommended application rate on hydrocarbon type fuels is 0.10gpm / ft²
- ❖ Suitable for use at temperatures up to -29°C.

STORAGE AND HANDLING

AFFF may be stored in its shipping container without change in its original physical or chemical characteristics. Shelf life is expected to be 20 years or more when stored at recommended temperatures and in original containers. It does not show significant sedimentation or precipitation in storage or after temperature cycling. Freezing and thawing have no effect on performance and the concentrate proportions satisfactorily in ordinary equipment at temperatures above 1.7°C. Synthetic foam concentrates should only be stored in stainless steel (Type 304L or 316), reinforced fiberglass polyester with a vinyl ester resin internal layer coating or plastic containers.

APPLICATIONS

- ❖ Refinery
- ❖ Hydrocarbon Storage Tanks
- ❖ Airports
- ❖ Ports
- ❖ Process Areas
- ❖ Solvent Extraction
- ❖ Polymer Manufacturing
- ❖ Domestic Fire
- ❖ Industrial Fire
- ❖ Mobile Equipment

ENVIRONMENTAL IMPACT

AFFF is biodegradable, low in toxicity and can be treated in effluent treatment plants.

AVAILABLE CAPACITY

20L, 30L, 200L

APPROVAL

UL Listed Foam Liquid Concentrate
UL File No. EX6069

SPECIFICATIONS

Product	AFFF 1%	AFFF 3%	AFFF 6%	AFFF Freeze Protect
Use Concentration	1%	3%	6%	1% / 3% / 6%
Specific Gravity	1.03 ± 0.02	1.01 ± 0.02	1.01 ± 0.02	1.06 ± 0.03
pH @ 20°C	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5
Viscosity @ 20°C	< 10 CST	< 10 CST	< 10 CST	< 10 CST
Suspended Sediment (V/V)	<0.1%	<0.1%	<0.1%	<0.1%
Freezing Point	-2°C	-2°C	-2°C	-31°C
Pour Point	-1°C	-1°C	-1°C	-30°C
Storage Temperature	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+29°C Min. +50°C Max.
Foam Expansion	Low > 7	Low > 7	Low > 7	Low > 7
25% Drainage Time	3 Minutes	3 Minutes	3 Minutes	4 Minutes

ALCOHOL RESISTANT AQUEOUS FILM FORMING FOAM CONCENTRATE

AR-AFFF

1% × 1% / 1% × 3%
3% × 3% / 3% × 6%



DESCRIPTION

Our AR-AFFF (Alcohol Resistant Film Forming Foam) is an ultra-high efficient multi-purpose foam concentrate. The film forming characteristics of AR-AFFF means that it spreads rapidly across a fire. As a result, it is highly effective against hydrocarbon fires and with the addition

of special polymers it is also high effective against polar solvents. It is intended for use on hydrocarbon fuels such as gasoline, kerosene, diesel, etc. and on polar solvent or water miscible fuels such as alcohols, ketones, esters, etc.

FEATURES

- ❖ Suitable for use on hydrocarbon or polar solvent type fuels.
- ❖ Excellent wetting characteristics when used in combating Class A fuels fires.
- ❖ Suitable for use with carbon steel, fiberglass, polyethylene or stainless steel.
- ❖ Suitable for use with all siliconized dry chemical extinguishing agents
- ❖ Recommended minimum application rate on hydrocarbon fuels is 0.10gpm/ft2.
- ❖ Recommended minimum application rate on polar solvent fuels is 0.17 gpm / ft2. (Some Polar type fuel fires have been successfully extinguished with a lower application rate).
- ❖ Compatible with other AR - AFFF concentrates of equivalent characteristics.

STORAGE AND HANDLING

AR-AFFF may be stored in its shipping container without change in its original physical or chemical characteristics. Shelf life is expected to be 20 years or more when stored at recommended temperatures and in original containers.

If the AR-AFFF is to be stored in an atmospheric type foam concentrate storage tank whether on mobile apparatus or stationary, limit the air space above the surface of the concentrate where possible and place a thin layer of quality mineral oil the surface of the foam concentrate to minimize any effect from evaporation.

APPLICATIONS

- ❖ Crash Fire Rescue
- ❖ Defense Facilities
- ❖ Storage Tanks
- ❖ Truck/Rail Loading or Unloading Facilities
- ❖ Processing / Storage Facilities
- ❖ Docks / Marine Tankers
- ❖ Flammable Liquid Containment Areas
- ❖ Solvent Extraction

ENVIRONMENTAL IMPACT

AR-AFFF is biodegradable, low in toxicity and can be treated in sewage treatment plants.

AVAILABLE CAPACITY

20L, 30L, 200L

APPROVAL

UL Listed Foam Liquid Concentrate
UL File No. EX6069

SPECIFICATIONS

Product	AR-AFFF 1 x 1	AR-AFFF 1 x 3	AR-AFFF 3 x 3	AR-AFFF 3 x 6
Use Concentration	1%	1% - 3%	3%	3% - 6%
Specific Gravity	1.05 ± 0.03	1.05 ± 0.03	1.02 ± 0.02	1.02 ± 0.02
pH @ 20°C	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5
Viscosity @ 20°C	2200 ± 500 CST	1750 ± 500 CST	1750 ± 500 CST	1500 ± 500 CST
Freezing Point	-2°C	-2°C	-2°C	-2°C
Pour Point	-1°C	-1°C	-1°C	-1°C
Storage Temperature	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.
Foam Expansion	Low > 7	Low > 7	Low > 7	Low > 7
25% Drainage Time	8 Minutes	8 Minutes 12 Minutes	8 Minutes	8 Minutes 12 Minutes

FILM FORMING FLUORO PROTEIN FOAM CONCENTRATE OR ALCOHOL RESISTANT FILM FORMING FLUORO PROTEIN FOAM CONCENTRATE

FFFP AR-FFFP

3% / 6%

3% X 3% / 3% X 6%



DESCRIPTION

Our FFFP is a unique combination of a rapid fire knockdown quality of conventional film forming AFFF with a tough cohesive foam blanket based on protein base material, providing high level of post fire security and burn back resistance as a top quality fluoro protein. FFFP's formulation is based on advanced protein foam technology containing hydrolyzed protein, fluorochemical surface active agent and preservatives to achieve the maximum synergetic effect.

Our AR-FFFP is multi-purpose natural protein based foam for use on a wide range of both hydrocarbon and polar solvent fuel fires. Our product contains special hydrophilic polymers producing a thick layer if applied on chemicals. It generates a fast flowing foam resistant against burn back with high insulating protection to heat and chemical destruction, if applied on any kind of fuel. It is suitable with all types of known equipment and is also compatible dry chemical powders.

FEATURES

- ❖ Film Forming for fast flame knock down and extinguishment.
- ❖ Stable and long lasting foam blanket for excellent burn back resistance and post-fire security
- ❖ Detergent free for high resistance of fuel pick up
- ❖ Foam blanket tree-seals when ruptured by personnel or equipment
- ❖ Readily bio degradable and virtually non-toxic. It is based on natural protein foaming agent and contains no harmful synthetic detergent.

STORAGE AND HANDLING

FFFP / AR-FFFP may be stored in its shipping container without change in its original physical or chemical characteristics. Shelf life is expected to be 10 - 15 years or more when stored at recommended temperatures and in original containers.

If the FFFP / AR-FFFP is to be stored in an atmospheric type foam concentrate storage tank whether on mobile apparatus or stationary, limit the air space above the surface of the concentrate where possible and place a thin layer of quality mineral oil the surface of the foam concentrate to minimize any effect from evaporation.

APPLICATIONS

FFFP/AR-FFFP is used in high risk situations where hydrocarbons (such as aviation kerosene, crude oil, gasoline, and diesel fuel) are stored, processed or transported. It is used extensively on rapid intervention vehicles at major international airports and military bases where fast extinguishment and post-fire security with limited quantities of foam concentrate essential.

FFFP foam concentrate provides quality protection for a wider range of hazardous areas such as:

- ❖ Airport crash fire rescue
- ❖ Aircraft hangar fire protection system
- ❖ Military equipment bases
- ❖ Docks / Marine tankers
- ❖ Trucks / Rail loading and unloading facilities
- ❖ Flammable liquid contaminated areas
- ❖ Mobile equipment

ENVIRONMENTAL IMPACT

FFFP / AR-FFFP is biodegradable, low in toxicity and can be treated in sewage treatment plants.

AVAILABLE CAPACITY

20L, 30L, 200L

APPROVAL

UL Listed Foam Liquid Concentrate; UL File No. EX6069

SPECIFICATIONS

Product	FFFP3	FFFP6	AR-FFFP 3 x 3	AR-FFFP 3 x 6
Use Concentration	3%	6%	3%	3% - 6%
Specific Gravity	1.08 ± 0.03	1.06 ± 0.03	1.08 ± 0.02	1.08 ± 0.02
pH @ 20°C	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5	7.5 ± 0.5
Viscosity @ 20°C	<20 CST	<20 CST	1750 ± 500 CST	1500 ± 500 CST
Freezing Point	-8°C	-8°C	-15°C	-15°C
Pour Point	-7°C	-7°C	-14°C	-14°C
Storage Temperature	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.	+1.7°C Min. +50°C Max.
Foam Expansion	Low > 7	Low > 7	Low > 7	Low > 7
25% Drainage Time	3 Minutes	3 Minutes	8 Minutes	8 Minutes 12 Minutes

SFFECO HAS A LONG STANDING ESTABLISHED REPUTATION FOR PIONEERING INNOVATION EVER SINCE ITS FOUNDATION IN 1983.

SFFECO HAS ITS STATE-OF-THE-ART MANUFACTURING PLANTS IN RIYADH AND DUBAI PRODUCING END-TO-END RANGE OF PRODUCTS FOR THE FIRE FIGHTING INDUSTRY MATCHING INTERNATIONAL STANDARDS IN QUALITY.



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SFFECO.com

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