

ANSULITE AFC-3MS 3% AFFF Concentrate

Description

ANSULITE AFC-3MS 3% AFFF (Aqueous Film-Forming Foam) Concentrate combines fluoro- and hydrocarbon-surfactant technologies to provide superior fire and vapor suppression for Class B hydrocarbon fuel fires. This synthetic foam concentrate is intended for firefighting applications at 3% solution in fresh, salt, or hard water.

ANSULITE AFC-3MS foam solution utilizes three suppression mechanisms for rapid fire knockdown and superior burnback resistance:

- The foam blanket blocks oxygen supply to the fuel.
- Liquid drains from the foam blanket and forms an aqueous film that suppresses fuel vapor and seals the fuel surface.
- The water content of the foam solution produces a cooling effect for additional fire suppression.

TYPICAL PHYSIOCHEMICAL PROPERTIES AT 77 °F (25 °C)

Appearance	Pale yellow liquid
Density	1.02 ± 0.02 g/ml
pH	7.0 – 8.5
Refractive Index	1.3655 minimum
Viscosity*	3.25 ± 1.0 cSt
Spreading Coefficient	3 dynes/cm minimum at 3% dilution
Pour Point	27 °F (-3 °C)
Freeze Point	27 °F (-3 °C)

*Cannon-Fenske viscometer at 77 °F (25 °C)

Application

ANSULITE AFC-3MS 3% AFFF Concentrate is intended for use on Class B hydrocarbon fuel fires with low water solubility, such as crude oils, gasolines, diesel fuels, and aviation fuels. It is not suitable for use on polar fuels with appreciable water solubility, such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone. It may also be used in conjunction with dry chemical agents to provide even greater fire suppression performance.

ANSULITE AFC-3MS Concentrate can be ideal for fixed and emergency response firefighting systems designed to protect naval and aviation assets. Typical applications include:

- Military and civilian aircraft facilities
- Crash fire rescue (per US DOT FAA AC No. 150/5210-6D)
- On-board marine/naval fire suppression systems
- Storage tanks
- Docks/marine tankers



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Approvals, Listings, and Standards

ANSULITE AFC-3MS 3% AFFF Concentrate is approved, listed, qualified under, or meets the requirements of the following specifications and standards:

- US Department of Defense Military Specification
 - MIL-F-24385F: Fire Extinguishing Agent, Aqueous Film-Forming Foam (AFFF) Liquid Concentrate, for Fresh and Sea Water
- Underwriters Laboratories Inc.
 - UL Standard 162, Foam Liquid Concentrates
 - Fresh and Sea Water
- National Fire Protection Association (NFPA)
 - NFPA 403, Standard for Aircraft Rescue and Fire-Fighting Services at Airports
 - NFPA 409, Standard on Aircraft Hangars
 - NFPA 412, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Fire Equipment
 - NFPA 414, Standard for Aircraft Rescue and Fire-Fighting Vehicles
 - NFPA 418, Standard for Heliports

Contact Johnson Controls Technical Services and/or refer to listing agency for current product and compatible hardware listings.

The ANSULITE AFC-3MS 3% AFFF Concentrate formulation contains short-chain, C-6 fluorochemicals manufactured using a telomer-based process that does not produce PFOS.

Foaming Properties

ANSULITE AFC-3MS 3% AFFF Concentrate may be effectively applied using most conventional foam discharge equipment at 3% dilution with fresh, salt, or hard water. For optimum performance, water hardness should not exceed 500 ppm expressed as calcium and magnesium.

Foaming Properties (Continued)

ANSULITE AFC-3MS Concentrate requires low energy to foam and the foam solution may be applied with aspirating and non-aspirating discharge devices. Non-aspirating devices, such as handline water fog/stream nozzles or standard sprinkler heads, typically produce expansion ratios from 2:1 to 4:1. Aspirating low-expansion discharge devices typically produce expansion ratios from 3.5:1 to 10:1, depending on the type of device and the flow rate. Medium-expansion discharge devices typically produce expansion ratios from 20:1 to 60:1.

TYPICAL FOAM CHARACTERISTICS** (Fresh and Sea Water)

Proportioning Rate	3%
Expansion Ratio LE	9.5
25% Drain Time (min:sec)	3:30
50% Drain Time (min:sec)	5:45

**per EN 1568-3, 2008 protocol

Proportioning

The recommended operational temperature range for ANSULITE AFC-3MS 3% AFFF Concentrate is 35 °F to 120 °F (2 °C to 49 °C) per UL-162. This foam concentrate can be correctly proportioned using most conventional, properly calibrated, in-line proportioning equipment such as:

- Balanced and in-line balanced pressure pump proportioners
- Balanced pressure bladder tanks and ratio flow controllers
- Around-the-pump type proportioners
- Fixed or portable in-line venturi type proportioners
- Handline nozzles with fixed eductor/pick-up tubes

For immediate use: The concentrate may also be diluted with fresh or sea water to a 3% pre-mix solution.

For delayed use: Consult Technical Services for guidance regarding suitability of a stored pre-mix solution (fresh water only).

Materials of Construction Compatibility

ANSULITE AFC-3MS 3% AFFF Concentrate compatibility with HDPE has been successfully evaluated using ASTM D1693-70 protocol under UL-162 standard. Concentrate corrosion studies with cold-rolled carbon steel (UNS G10100), 90-10 copper-nickel (UNS C70600), 70-30 nickel-copper (UNC N04400), bronze (UNS C90500), and CRES steel (UNS S30400) have been successfully completed per ASTM E527 protocol under MIL-F-24385F specification.

To help avoid corrosion, galvanized pipe and fittings should never be used in contact with undiluted ANSULITE AFC-3MS Concentrate. Refer to Johnson Controls Technical Bulletin *Acceptable Materials of Construction* for recommendations and guidance regarding compatibility of foam concentrate with common materials of construction in the firefighting foam industry.

Storage and Handling

ANSULITE AFC-3MS 3% AFFF Concentrate should be stored in the original supplied package (HDPE totes, drums, or pails) or in the recommended foam system equipment as outlined in Johnson Controls Technical Bulletin *Storage of Foam Concentrates*. The product should be maintained within the recommended temperature range. If the concentrate freezes during transport or storage, full product serviceability can be restored upon thaw with gentle re-mixing.

Storage and Handling (Continued)

Factors affecting the foam concentrate's long-term effectiveness include temperature exposure and cycling, storage container characteristics, air exposure, evaporation, dilution, and contamination. The effective life of ANSULITE AFC-3MS Concentrate can be maximized through optimal storage conditions and proper handling. ANSULITE concentrates have demonstrated effective firefighting performance with contents stored in the original package under proper conditions for more than 10 years.

ANSULITE AFC-3MS Concentrate has been successfully evaluated by the US Naval Sea Systems Command for prolonged compatibility with other 3% AFFF concentrates qualified under MIL-F-24385F specification.

- Mixing with foam concentrates not vetted by MIL-F-24385F is not recommended.
- For immediate incident response, it is appropriate to use the concentrate in conjunction with comparable 3% AFFF products.

Inspection

ANSULITE AFC-3MS 3% AFFF Concentrate should be inspected periodically per NFPA 11, EN 13565-2, or other relevant standard. A representative concentrate sample should be sent to Johnson Controls Foam Analytical Services or other qualified laboratory for quality analysis per the applicable standard. An annual inspection and sample analysis is typically sufficient, unless the product has been exposed to unusual conditions.

Ordering Information

ANSULITE AFC-3MS 3% AFFF Concentrate is available in pails, drums, totes, or bulk shipment. Commercially-packaged product is designated AFC-3MS-C. Product requiring DLA, US military contract packaging is designated AFC-3MS.

Part No.	Description	Approximate Shipping Weight
Pail		
442708*	5 gal (19 L)	45 lb (20.4 kg)
Drum		
442710*	55 gal (208 L)	495 lb (224.5 kg)
Tote		
442711*	265 gal (1,003 L)	2,463 lb (1,117 kg)
Pail		
442707‡	5 gal (19 L)	45 lb (20.4 kg)
Drum		
442709‡	55 gal (208 L)	495 lb (224.5 kg)

* AFC-3MS-C Concentrate in commercial packaging (Pails and Drums, UL-162 compliant)

‡ AFC-3MS Concentrate in MIL-F-24385F specified packaging for direct government acquisition. Packaging requirements for specific contract identification is the responsibility of the contract holder.

Safety Data Sheets (SDS) are available at www.ansul.com

If any foam product is discharged into the environment, efforts should be made to control, contain and collect the discharge for proper disposal, while following all applicable laws, regulations, and codes. Further information regarding the use, discharge, and disposal of firefighting foams can be found at www.ansul.com.

Note: The converted metric values provided are for dimensional reference only and do not reflect an actual measurement.

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