



by Tyco Fire Suppression & Building Products

ANSULITE 1x3 F-601A AR-AFFF CONCENTRATE

Data/Specifications

DESCRIPTION

ANSULITE 1x3 F-601A AR-AFFF is formulated from special fluorochemical and hydrocarbon surfactants, a high molecular weight polymer, and solvents. It is transported and stored as a concentrate to provide ease of use and considerable savings in weight and volume. It contains no PFOS or PFOA. It is intended for use as a 1% proportioned solution on hydrocarbon fuels and as a 3% proportioned solution on polar solvent fuels in fresh, salt, or hard water. Water hardness should not exceed 500 ppm expressed as calcium and magnesium. It may also be used and stored as a pre-mixed solution in only fresh, potable water.

There are three fire extinguishing mechanisms in effect when using ANSULITE 1x3 F-601A foam solution on either a conventional Class B hydrocarbon fuel such as gasoline, diesel fuel, etc.; or a Class B polar solvent (water miscible fuel) such as methyl alcohol, acetone, etc.

1. An aqueous film is formed in the case of a conventional hydrocarbon fuel, or a polymeric membrane in the case of a polar solvent fuel. This film or membrane forms a barrier to help prevent the release of fuel vapor.
2. Regardless of the fuel type, a foam blanket is formed which excludes oxygen. The liquids that form the film or the polymeric membrane are drained from the foam blanket.
3. The water content of the foam produces a cooling effect.

Typical Physiochemical Properties at 77 °F (25 °C)

Appearance	Purple Gelled Liquid
Density	1.02 ± 0.01 g/ml
pH	7.5 – 8.5
Refractive Index	1.3600 ± 0.0015
Viscosity	2700 ± 500 cps*
Spreading Coefficient	4.0 – 6.0

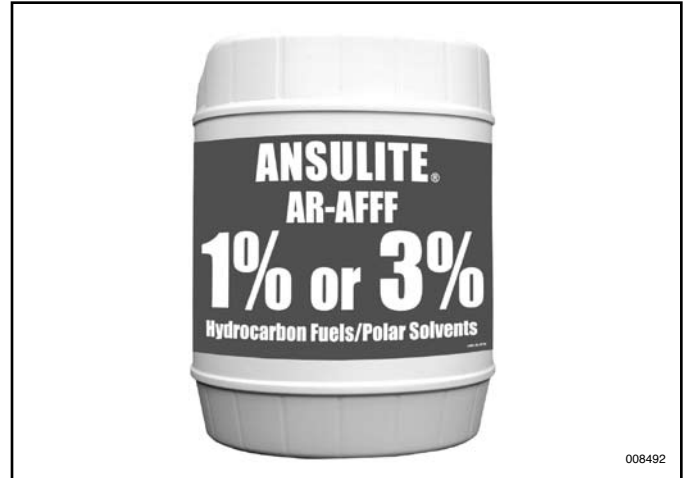
*Brookfield Viscometer Spindle #4, Speed 30 rpm

ANSULITE 1x3 F-601A AR-AFFF Concentrate is a non-Newtonian fluid that is both pseudoplastic and thixotropic. Because of these properties, dynamic viscosity will decrease as shear increases.

APPLICATION

ANSULITE 1x3 F-601A AR-AFFF can be used on either conventional Class B fuels or polar solvent-type Class B fuels. Its excellent wetting characteristics make it useful in combating Class A fires as well. Because of the low energy required to make foam, it can be used with both aspirating and non aspirating discharge devices.

To provide even greater fire protection capability, it may be used with Purple-K dry chemical extinguishing agents without regard to the order of application to provide even greater fire protection capability. Due to the velocity of the dry chemical discharge, care must be taken not to submerge the polymeric membrane below the fuel surface when using the twin agent method on polar solvent fuels.



PERFORMANCE

Fire Performance

The fire performance of ANSULITE 1x3 F-601A AR-AFFF is measured against Underwriters Laboratories Standard 162 (Latest Revision) fire tests. The UL testing focuses on fuels such as heptane and isopropyl alcohol. ANSULITE 1x3 F-601A AR-AFFF was formulated to provide superior performance on all fire tests, especially high octane gasoline.

Foaming Properties

When used with fresh, salt or hard water at the correct dilution with most conventional foam making equipment, the expansion will vary depending on the performance characteristics of the equipment. Aspirating discharge devices produce expansion ratios from 5:1 to 10:1 depending primarily on the type of aspirating device and the flow rate. Non-aspirating devices, such as hand-line water fog/stream nozzles or standard sprinkler heads, give expansion ratios of 2:1 to 4:1. Medium-expansion discharge devices produce typical expansion ratios between 20:1 and 60:1 depending primarily on the type of device and operating conditions.

Proportioning

ANSULITE 1x3 F-601A AR-AFFF can be easily proportioned (at the correct dilution) using most conventional proportioning equipment such as:

- Balanced pressure and in-line balanced pressure pump proportioning equipment.
- Balanced pressure bladder tank proportioners
- Around-the-pump and through-the-pump proportioners
- Fixed or portable (in-line) Venturi-type proportioners
- Hand-line nozzles with fixed induction/pickup tubes

The minimum and maximum usable temperature for ANSULITE 1x3 F-601A AR-AFFF in this equipment is 35 °F (2 °C) to 120 °F (49 °C).

PERFORMANCE (Continued)

Storage/Shelf Life

When stored in the packaging supplied (polyethylene totes, drums, or pails) or in equipment recommended by the manufacturer and within the temperature limits specified, the shelf life of ANSULITE 1x3 F-601A AR-AFFF is about 20-25 years. The factors affecting shelf life and stability for AFFF agents are discussed in detail in ANSUL Technical Bulletin No. 54. Freezing of the product should be avoided. If the product is frozen during transport or storage, it must be thawed and inspected for signs of separation. If separation has occurred, the product must be mechanically mixed until homogeneous.

When the concentrate is to be stored in an atmospheric storage tank, a 1/8 to 1/4 in. (3–6 mm) layer of mineral oil should be added to seal the concentrate and minimize the effects of evaporation.

Compatibility

Since it is a unique blend of surfactants, high molecular weight polymers, and solvents; it is recommended that ANSULITE 1x3 F-601A AR-AFFF not be mixed with any other foam concentrates. Consult ANSUL Technical Services with any questions of compatibility.

Materials of Construction Compatibility

Tests have been performed with ANSULITE 1x3 F-601A AR-AFFF verifying its compatibility with standard carbon steel “black” pipe and pipe manufactured from various stainless steel or brass compounds. Alternative pipe, plastic fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction. Refer to ANSUL Technical Bulletin No. 59 (Form No. F-90109) addressing acceptable materials of construction for use with ANSUL foam concentrates.

To help prevent corrosion, galvanized pipe and fittings must not be used in areas where they will contact the undiluted concentrate.

Please consult ANSUL Technical Services for specific guidelines concerning materials of construction.

Inspection

As with any fire extinguishing agent, ANSULITE 1x3 F-601A AR-AFFF, whether in the concentrate or pre-mixed form, should be inspected periodically. NFPA 11 “Standard for Low Expansion Foam and Combined Agent Systems” requires that foam concentrate samples be submitted to the manufacturer or other qualified laboratory for quality condition testing at least annually. Please refer to the Field Inspection Manual, Part No. 31274, for the detailed procedures necessary to perform this inspection. An annual inspection is recommended unless unusual conditions of exposure occurs, as described in ANSUL Technical Bulletin No. 54. In such cases, contact ANSUL Technical Services.

APPROVALS AND LISTINGS

Underwriters Laboratories successfully tested ANSULITE 1x3 F-601A AR-AFFF to the requirements contained in UL 162 “Standard for Air-Foam Equipment and Liquid Concentrates.” To receive a UL listing, the following tests must be performed successfully:

- Foam Quality Tests
- Class B Hydrocarbon Fuel Fire Tests
- Class B Polar Solvent Fuel Fire Tests
- Foam Identification Tests
- Tests of Shipping Containers

In addition to determining agent characteristics, Underwriters Laboratories lists ANSULITE 1x3 F-601A AR-AFFF for use with specific hardware components that also carry the UL listing.

ORDERING INFORMATION

ANSULITE 1x3 F-601A AR-AFFF is available in pails, drums, totes or bulk shipment.

Part No.	Description	Shipping Weight	Cube
437187	5 gal (19 L) Pail	45 lb (20.4 kg)	1.25 ft ³ (0.0353 m ³)
437188	55 gal (208 L) Drum	495 lb (224.5 kg)	11.83 ft ³ (0.3350 m ³)
437189	265 gal (1000 L) Tote	2463 lb (1117 kg)	50.05 ft ³ (1.42 m ³)
429962	Bulk Order	Contact ANSUL Technical Services	