ANSULITE® ARC 3% or 6% FREEZE-PROTECTED AR-AFFF CONCENTRATE

Data/Specifications

DESCRIPTION

ANSULITE® ARC (Alcohol-Resistant Concentrate) 3% or 6% Freeze-Protected AR-AFFF (Alcohol-Resistant – Aqueous Film-Forming Foam) Concentrate 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 is intended for use as a 3% or 6% proportioned solution (depending on the type of fuel) in fresh, salt, or hard water.

The foam concentrate may be stored at temperatures to 0 °F (–18 °C) without freezing. If stored below the minimum use temperature, freezing may occur. If frozen, the concentrate can be thawed and remixed before use.

There are three fire extinguishing mechanisms in effect when using ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate 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. First, 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. Second, regardless of the fuel type, a foam blanket is formed which excludes oxygen and from which drains the liquids that form the film or the polymeric membrane. Third, the water content of the foam produces a cooling effect.

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

Appearance	Light Yellow to Amber Gelled Liquid
Density	1.065 g/ml ± 0.020
pH	7.0 – .8.5
Refractive Index	1.3925 ± 0.0075
Surface Tension (3% Solution)	18 ± 1 dynes/cm
Viscosity	1450 ± 550 centipoise*

*Brookfield Viscometer Spindle #4, Speed 30

ANSULITE ARC 3% or 6% Freeze-Protected 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 ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate is unique among the ANSULITE AFFF agents in that the minimum use temperature is the lowest of all conventional AR-AFFF products on the market. This product can be used on either conventional Class B fuels or the 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 to make foam, it can be used with both aspirating and non-aspirating discharge devices.

To provide even greater fire protection capability, it can be used with dry chemical extinguishing agents without regard to the order of application. Due to the velocity of the dry chemical discharge, care must be taken not to submerge the polymeric membrane below the fuel surface.

PERFORMANCE

Fire Performance – The fire performance of ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate is measured primarily against Underwriters Laboratories Standard 162. There are no U.S. or foreign government specifications on this type of product.

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 of from 5:1 to 10:1 depending primarily on type of aspirating device and flow rate. Non-aspirating devices such as handline water fog/stream nozzles or standard sprinkler heads give expansion ratios of 2:1 to 4:1.

Proportioning – ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate can be easily proportioned (at the correct dilution) using most conventional proportioning equipment such as:

1. Balanced pressure and in-line balanced pressure pumped proportioning equipment
2. Balanced pressure bladder tank type proportioner
3. Around-the-pump proportioners
4. Fixed or portable (in-line) venturi type proportioners
5. Handline nozzles with fixed induction/pickup tubes

The minimum and maximum usable temperature for ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate in this equipment is 0 °F (–18 °C) to 120 °F (49 °C) respectively.

PERFORMANCE (Continued)

Storage/Shelf Life – When stored in the packaging supplied (polyethylene drums or pails) or in equipment recommended by the manufacturer and within the temperature limits specified, the shelf life of ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate is about 15 years. The factors affecting shelf life and stability for ANSULITE AFFF Agents are discussed in detail in Ansul Technical Bulletin No. 54. Freezing of the product should be avoided. If, however, 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 1/4 in. (6 mm) layer of mineral oil should be added to seal the concentrate and minimize the effects of evaporation.

Compatibility – Since ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate is a unique blend of surfactants, high molecular weight polymers, and solvents; it is recommended that Ansul Fire Protection be consulted before concentrate is mixed with any other concentrates.

Materials of Construction Compatibility – Tests have been performed with ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate 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.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

Please **first** consult ANSUL for specific guidelines concerning materials of construction.

Inspection – NFPA 11, "Standard for Low, Medium, and High Expansion Foam," states, "At least annually, all foam systems shall be thoroughly inspected and checked for proper operation. The inspection shall include performance evaluation of the foam concentrate or premix solution quality or both. At least annually, an inspection shall be made of foam concentrates and their tanks or storage containers for evidence of excessive sludging or deterioration." Please refer to the Field Inspection Manual, Part No. 31274, for the detailed procedures to perform this inspection. An annual inspection is recommended unless unusual conditions of exposure occur such as are described in Ansul Technical Bulletin No. 54. In such cases, ANSUL's recommendation should be sought.

APPROVALS AND LISTINGS

Underwriters Laboratories successfully tested ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate to the requirements contained in the UL Standard 162, "Standard for Air-Foam Equipment and Liquid Concentrates." To receive the UL listing, the following tests had to be performed successfully:

1. Foam Quality Tests
2. Class B Hydrocarbon Fuel Fire Tests
3. Class B Polar Solvent Fuel Fire Tests
4. Foam Identification Tests
5. Tests of Shipping Containers

Besides determining agent characteristics, Underwriters Laboratories lists ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate for use with specific hardware components that also carry the UL listing. To obtain these listings, ANSUL selected various hardware components from the major U.S. manufacturers of foam hardware.

ORDERING INFORMATION

ANSULITE ARC 3% or 6% Freeze-Protected AR-AFFF Concentrate is available in pails, drums, totes, or bulk shipment.

Part No. 415245	5 Gallon Pail
Part No. 415246	55 Gallon Drum
Part No. 432852	265 Gallon Tote
Part No. 73758	Bulk (contact ANSUL about domestic truckload delivery)

Shipping Weight:

5 gal (19 L) pail – 45 lb (20.4 kg)
55 gal (208.1 L) drum – 495 lb (224.5 kg)
265 gal (1000 L) tote – 2465 lb (1118 kg)

Cube:

5 gal (19 L) pail – 1.25 ft^3 (0.0353 m^3)
55 gal (208.1 L) drum – 11.83 ft^3 (0.3350 m^3)
265 gal (1000 L) tote – 50.05 ft^3 (1.42 m^3)

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