

# Alcoseal 3-6

Alcoseal 3-6 is a superior quality Alcohol Resistant Film-Forming FluoroProtein (AR-FFFP) fire fighting foam concentrate for extinguishing and securing flammable hydrocarbon and polar solvent liquid fires.

Its unique formulation is based on advanced protein foam technology. The protein base material provides a tough cohesive foam blanket with high resistance to heat that provides the same post-fire security as a top quality FluoroProtein (FP). Fluorochemical surface active agents combined with the protein base produce a vapour-sealing aqueous film on hydrocarbons that provides the same fast control and extinguishment as a top quality synthetic AFFF. On polar solvents an insoluble polymer membrane is formed which protects the foam blanket from the solvent.

- Highly versatile and so eliminates the need to stock a variety of foam types.
- Film-forming on hydrocarbons for fast flame knockdown and extinguishment.
- Stable and long-lasting foam blanket for excellent burnback resistance and post-fire security.
- Detergent-free for high resistance to fuel pick-up.
- Foam blanket re-seals when ruptured by personnel or equipment.
- Reduced stocks, low cost storage, long shelf-life, and low usage levels combine to provide maximum cost-effectiveness.

#### ENVIRONMENT

Alcoseal 3-6 is readily biodegradable and virtually non-toxic to aquatic organisms. It is based on a natural protein foaming agent and contains no harmful synthetic detergent or glycol ether.

#### APPLICATIONS

Alcoseal 3-6 is the ideal fire fighting foam to use in high risk situations where hydrocarbons (such as crude oil, gasoline, diesel fuel, aviation kerosene) and/or polar solvents (such as alcohols, ketones, esters, and ethers) are stored, processed, or transported. It is used extensively by industrial and municipal fire departments. Typical applications include hydrocarbon storage tanks, process areas, warehouses, road/rail loading racks, power stations, marine terminals, and offshore platforms.

Alcoseal 3-6 provides a vapour-suppressing foam blanket on spills of hazardous liquids.

#### PERFORMANCE

The fire performance of Alcoseal 3-6 is measured primarily against Underwriters Laboratories Standard UL 162 (7th Edition). It has also demonstrated outstanding performance in fire tests carried out by independent fire authorities worldwide.

#### APPROVALS AND UL LISTINGS

Alcoseal 3-6 has numerous approvals and UL Listings including a "Triple Listing" as a FluoroProtein, AFFF, and Alcohol Resistant foam.

#### EQUIPMENT

Alcoseal 3-6 is intended for use at 3% (3 parts concentrate to 97 parts of water) on hydrocarbons and 6% on polar solvents.

Alcoseal 3-6 is readily proportioned using conventional foam proportioning equipment such as portable and fixed (in-line) foam venturi proportioners, handline nozzles/branchpipes with pick-up tubes, balanced pressure variable flow proportioners, balanced pressure bladder tank proportioners, and around-the-pump proportioners.

Alcoseal 3-6 can be used with air

aspirating discharge devices such as low expansion branchpipes, monitors, top pourer sets, rimseal foam pourers, and foam/water sprinklers.

As with any foam Alcoseal 3-6 is best applied gently on to the burning liquid surface. However, its exceptional resistance to fuel contamination enables it to withstand vigorous mixing with hydrocarbon fuel. This makes it ideal for forceful application on to hydrocarbon storage tank fires from ground-based mobile monitors or through base (sub-surface) injection systems.

Alcoseal 3-6 also produces top quality medium expansion foam when proportioned at 6% and applied through medium expansion branchpipes and bund pourers.

Alcoseal 3-6 can be used with non-aspirating discharge devices such as spray/fog branchpipes and nozzles, monitors, and spray/fog sprinklers. Non-aspirated application is not recommended as the primary method of attack for major fires where a stable foam cover is essential.

#### COMPATIBILITY

Alcoseal 3-6 is suitable for use in combination with:

- Soft or hard, fresh, brackish or sea water.
- Dry powder extinguishing agents either separately or as twin agent systems.
- Expanded protein-based or synthetic foams for application to a fire in sequence or simultaneously.

## PHYSICO-CHEMICAL PROPERTIES

|  |         |                     |
|--|---------|---------------------|
| Appearance                               |         | Dark brown liquid   |
| Specific gravity @ 20°C (68°F)           |         | 1.09                |
| pH @ 20°C (68°F)                         |         | 6.7 - 7.7           |
| Viscosity                                |         | Non-Newtonian       |
| Maximum continuous storage temperature   | °C (°F) | 40 (104)            |
| Maximum intermittent storage temperature | °C (°F) | 60 (140)            |
| Effect of freeze/thaw                    |         | No performance loss |
| Lowest use temperature                   | °C (°F) | -3 (27)             |
| Sediment as shipped                      | % v/v   | ≤ 0.25              |
| Sediment after ageing                    | % v/v   | ≤ 0.5               |

Alcoseal 3-6 is a non-Newtonian fluid that is both pseudoplastic (shear thinning) and thixotropic.

## FOAM PROPERTIES

As with any foam, the foam properties of Alcoseal 3-6 vary depending on the performance characteristics of foam equipment used and the operating conditions. When tested in accordance with UK Defence Standard 42-41 it gives the following properties:

|                   |         |       |       |
|-------------------|---------|-------|-------|
| Induction Rate    | %       | 3     | 6     |
| Expansion Ratio   |         | ≥ 7:1 | ≥ 7:1 |
| 25% Drainage Time | minutes | ≥ 5   | ≥ 10  |

## STORAGE

Alcoseal 3-6 is exceptionally stable in long-term storage. A shelf-life of at least ten years can be expected if it is stored properly.

## DISPOSAL

Alcoseal 3-6 can be successfully treated in biological waste water treatment systems.

## RELIABILITY

Alcoseal 3-6 is produced to rigorous quality control standards to ensure consistent fire performance and excellent product reliability. Angus Fire operates a quality management system which complies with the requirements of BS EN ISO 9001:2000.

## TYPICAL PACKING SPECIFICATION

|                    | Plastic Square  |                 | Plastic Cylindrical |               | Ecobulk MX                  |
|--------------------|-----------------|-----------------|---------------------|---------------|-----------------------------|
| Capacity           | 25 litres       | 5 US gallons    | 200 litres          | 55 US gallons | 1000 litres                 |
| Empty Weight (kg)  | 1.2             | 0.8             | 9.0                 |               | 70                          |
| Filled Weight (kg) | 29              | 22              | 227                 | 236           | 1160                        |
| Dimensions (mm)    | 448 x 286 x 286 | 402 x 293 x 240 | 580 D x 922 H       |               | 1200 L x<br>1000 W x 1160 H |

## EMERGENCY DELIVERY

For emergency supplies of Alcoseal 3-6 phone +44 (0) 15242 61166