



## TF3

### Training Foam (TF) Concentrate

#### Integrity

*Doing what's right, rather than what's convenient*

Angus Fire prides itself on the open and honest way in which we conduct our business throughout the world. Our foams are an extension of our ethical beliefs and we pride ourselves in being the responsible foam manufacturer, balancing high performance with minimal environmental impact. Our fluorine free foams are designed not to contain any fluorosurfactants, fluoropolymers, organohalogens, PFCAs, PFOA and no PFOS in accordance with EU Directive 2006/122/EC and amended Council Directive 76/769/EEC.

#### Balanced Chemical System

Each training foam is designed to be used in live fire training scenarios and do not contain the active ingredients which enable high performance foams to work. These foams are kinder to the environment and can be used for training and testing of systems when required.



- Fluorosurfactant free training foam
- Mimics the application and physical properties of Angus Petroseal<sup>CS</sup> 3% FFFP
- Low toxicity

**A fluorosurfactant free training foam which mimics the application and physical properties of Angus Petroseal<sup>CS</sup> 3% FFFP fire fighting foam.**

TF3 is a natural protein based product which mimics the performance of Angus Petroseal<sup>CS</sup> 3 FFFP, an aviation industry standard for protein based fire fighting foams, to provide realistic fire training without the use of fluorinated chemicals.

Angus Fire has a commitment and long track record of formulating foams for minimal environmental impact and maximum performance. A key element of this responsibility is to use a natural organic base material, control and reduce the quantities of fluorosurfactants and other chemicals that could be released into the environment.

The use of low toxicity training foams permits front-line fire fighters to be continuously trained in critical fire fighting techniques to ensure high performance standards of readiness are maintained. This also allows proven fluorosurfactant products to minimise the risk to fire fighter safety in the event of an emergency.

The potential for conflict between all these objectives is clear, no more so than in aviation fire fighting.

Angus Fire has developed TF3 Fluorine Free Foam (F3) for training to eliminate this conflict. It now allows foam users to meet their key objectives and responsibilities within the legislative requirements.

#### Description

TF3 is a Fluorine-Free Foam (F3) organic concentrate for 3% usage and has been specially formulated as a unique training foam with no fluorosurfactants. It is the first foam which can be used routinely as a substitute for fire vehicle calibration and equipment testing, to mimic the induction characteristics of Petroseal<sup>CS</sup> 3 FFFP while complying with European regulatory requirements including those of the UK Civil Aviation Authority and Environmental Agency.

TF3 was developed to meet the stringent environmental and regulatory requirements of the aviation sector. TF3 also has clear training benefits for several other fire fighting applications and other Angus concentrates including Niagara AR-FFFP and Tankmaster FP.

#### Environment

TF3 is formulated for minimum environmental impact. It is produced from natural proteins, and is free of fluorinated chemicals, glycol ethers, biocides and zinc. It is also readily biodegradable. TF3 has exceptionally low aquatic toxicity to fresh and seawater organisms. It contains no synthetic detergents and so will not carry hydrocarbons through fuel separators.

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### Application

TF3 is suitable for use in training with conventional foam induction and delivery equipment such as the Angus Hi-Combat range of portable foam equipment. It is not recommended for real life fire fighting incidents.

### Induction

3% induction is recommended to mimic the induction performance and foam quality characteristics of Petroseal<sup>CS</sup> 3 FFFP.

### Storage Recommendations

TF3 should be stored in the original containers and according to Angus Fire's storage recommendations. The labels are colour coded green to avoid confusion with front-line Angus fire fighting foams. TF3 should be used within 2 years from the date of purchase. In tropical conditions a shelf life of no longer than 6 months from the date of purchase can be expected.

### Disposal

For fire water runoff and accidental spillage please refer to Angus Fire's Foam Disposal Guide and MSDS for more information.

### Reliability

TF3 is produced to rigorous quality control standards which ensure consistent fire performance and excellent product reliability.

Angus Fire operates a quality management system which complies with the requirements of BS EN ISO 9001:2008.

#### Typical Physico-Chemical Properties

Appearance		Dark Brown Liquid
Specific gravity @ 20°C (68°F)		1.13 - 1.16
pH @ 20°C (68°F)		6.5 - 8.0
Viscosity @ 20°C (68°F)	mm <sup>2</sup> sec <sup>-1</sup>	10
Maximum continuous storage temperature	°C (°F)	49 (120)
Maximum intermittent storage temperature	°C (°F)	60 (140)
Freezing point	°C (°F)	-13 (9)
Effect of freeze/thaw		No loss of performance
Lowest use temperature	°C (°F)	0 (32)

#### Typical Foam Properties

Foam generated using the U.K. Defence Standard DEF42-40 5 lpm branchpipe at 7 Bar pressure. Foam collected in a 1630 ml N.F.P.A. drainage pan.

Expansion ratio		≥ 7.5 :1
25% drainage time	min/sec	≥ 5'00"

#### Typical Packing Specification

	Green Plastic Rectangular	Green Plastic Cylindrical
Capacity	20 litres	200 litres
Filled weight (kg)	24	239
Nominal dimensions (mm)	300 L x 250 D x 390 H	580 DIA x 922 H
Part Number	F0130G0P	F0130J0P



**EMERGENCY FOAM SERVICE** Call +44 (0) 15242 61166 – 24 hours a day, every day

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Angus Fire operates a continuous programme of product development. The right is therefore reserved to modify any specification without prior notice and Angus Fire should be contacted to ensure that the current issues of all technical data sheets are used.

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