

# Fire Fighting Foam Concentrates

## AFFF- LF 1%, 3%, 6% Low Freeze Fire Fighting Foam Concentrates

### General Description

An Internationally accredited range of Low Freeze Aqueous Film Forming Foams (AFFF-LF) concentrates.

Designed for fast fire extinguishment of Class B hydrocarbon fuels such as crude oil, gasoline and fuel oil. Formulated for use with either fresh or seawater.

Not suitable for use on fuels which are polar solvents and water miscible such as alcohols, ketones, aldehydes and ethers.

### Fire Performance Approvals

The Oil Technics range of 1%, 3% and 6% AFFF-LF concentrate are Internationally accredited to:

- Underwriters Laboratory (UL162) Listed for grades 1, 3 and 6%
- International Civil Aviation Organisation (Level B)

### Environmental Impact

- All grades are butyl carbitol free
- Low fluorine content – typical values:  
1% 1.5% fluorine  
3% 0.5% fluorine  
6% 0.3% fluorine
- Fully meet the COD, BOD requirements of US Military specification MIL-F-24385 Revision F.

	1%	3%	6%
COD (mg/L)	$2 \times 10^6$	$8 \times 10^5$	$5 \times 10^5$
BOD5 (mg/L)	$1 \times 10^6$	$5 \times 10^5$	$3 \times 10^5$
BOD20 (mg/L)	$2 \times 10^6$	$8 \times 10^5$	$5 \times 10^5$
BOD20/COD	0.93	0.96	0.90

- Classified as biodegradable with low toxicity to aquatic organisms.

### Physical Properties

	1%	3%	6%
<b>Appearance</b>	Clear pale straw		
Specific Gravity at 20°C	1.04	1.05	1.04
pH at 20°C	7 - 8	7 - 8	7 - 8
Viscosity at 20°C mPa.s	16.0	7.0	3.5
Freezing Point (°C)	<-20	<-20	<-20
Lowest Use Temperature (°C)	-18	-18	-18
Expansion *	≥ 6:1	≥ 6:1	≥ 6:1
25% Drainage (minutes) *	≥ 2.75	≥ 2.75	≥ 2.75
Maximum Storage Temperature (°C)	60	60	60
Minimum Storage Temperature (°C)	-20	-20	-20
Freeze Thaw Effect on Concentrate	None	None	None

\*Foam quality will depend on the foam equipment used and the operating conditions. The above are tested in accordance with UK Defence Standard 42-40.

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## Applications

Oil Technics foam concentrates provide quality protection wherever hydrocarbons present a fire risk:

- Offshore platforms and helidecks
- Marine terminals and loading racks
- Petrochemical refining, processing and storage facilities.
- Airport RIV's and aircraft hanger systems

Produced AFFF-LF foams can also be used as wetting agents for combating Class A fires (i.e. tyres, paper, wood) and for providing a vapour suppression blanket on hydrocarbon spills.

## Proportioning Equipment

Oil Technics foam concentrates are readily proportioned with the following equipment:

- In-line inductors, fixed or portable
- Balanced pressure variable flow proportioners
- Bladder tank Balanced Pressure proportioning skid
- Around the pump proportioners
- Handline, aspirating nozzles with fixed inductor pickup tube.

## Discharge Equipment

Oil Technics foam concentrates are suitable for use with:

- Foam chambers
- Aspirating and non-aspirating sprinklers or spray nozzles
- Water fog nozzles for handlines and monitors
- Foam makers for use with either Floating Roof or Bund protection systems.

## Proportioning Information

**1%: 1 part foam concentrate to 99 parts water**

**3%: 3 parts foam concentrate to 97 parts water**

**6%: 6 parts foam concentrate to 94 parts water**

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## Storage and Shelf Life

Best stored as supplied in original, unopened containers. Suitable for storage in containers and tanks manufactured from:

- Stainless steel (Type 304L or 316L)
- High density cross-linked polyethylene
- RFP – vinyl ester epoxy resin only

If kept in the original manufacturer's supplied container and stored between -20°C and 60°C a shelf life of at least 10 years can be expected.

To prolong the shelf life of any AFFF-LF do not expose to temperature extremes and prevent contamination from foreign materials.

## Compatibility

Laboratory tests have shown 1%, 3% and 6% AFFF-LF are completely compatible in all proportions with other high quality low freeze aqueous film forming foams and ABC and BC fire fighting powders.

For further information consult Oil Technics Ltd.

## Inspection and Testing

Oil Technics foam Concentrates should be inspected and tested annually as part of the fire fighting foam maintenance program.

Oil Technics Limited offers a worldwide foam testing service.

For further details please contact us or see our website: [www.foamtesting.com](http://www.foamtesting.com)

