

## TOWALEX FFFP 3% Film Forming Fluoroprotein 3% Foam

### Features

- 3% on hydrocarbon fires
- Newtonian viscosity
- Freeze protected to -12°C
- For use with air aspirating or non-aspirating discharge devices
- Suitable for use with fresh, salt or hard water
- Supplied ready to use in 20, 25, 200 or 1000 litres packaging

### Description

TOWALEX FFFP 3% is a film forming fluoroprotein foam concentrate (FFFP) based on hydrolysed protein, fluorosurfactants blending, stabilizer salts and glycol ethers for use at 3% induction ratio.

An intense research work including many laboratory and full scale fire tests indicated the outstanding sealing and extinguishing performance of TOWALEX FFFP 3%. Compared to other protein based foams, TOWALEX FFFP 3% produces an extremely fast spreading aqueous film, that acts as a vapour suppressor as well as a "lubricant" helping the foam blanket to rapidly cover all surfaces. The remarkable stability of the protein foam provides a long resistance to re-ignition. The result is a very effective agent with an outstanding performance in extinguishment and securing a fire scenario.

### Performance

On spills or large hydrocarbon fires, the foam immediately forms an aqueous film on the surface of the fuel. The spreading film covers the fuel to extinguish the fire and prevents hydrocarbon evaporation. This leads to a superior burn back resistance. The tough structure of the protein based foam enhances its stability on the fuel. The foam has a much higher fuel tolerance than other regular fluoroprotein foams.

In case of injuries of the foam blanket it shows very good healing capabilities closing any defect very quickly. Additionally it provides a cooling function on the fuel by enclosed water and makes the water float on fuel surfaces in spite of it's usually higher density.



### Application

TOWALEX FFFP 3% is intended for use on Class B hydrocarbon fuels being classified as non-water miscible (so called non-polar fuels) such as various crude oils, gasoline, diesel fuels, aviation fuels and hydrocarbons with low water solubility such as MTBE or bio-fuels with a maximum content of 15% ethanol.

TOWALEX FFFP 3% is ideal for fast extinguishing of spills, for airport emergency response. Efficient oil tank storage protection, and fixed spray protection systems.

The foam produced by TOWALEX FFFP 3% can be used either with air aspirating or non-aspirating type discharge devices.

Sea water can be used without an increase in the application rate.

It can also be used with foam compatible dry chemical extinguishing agents without regard to the order of application, to provide even greater fire protection capability.

TOWALEX FFFP 3% can be used by most conventional foam equipment such as:

- Balance pressure pump proportioning equipment
- Bladder tank and related proportioners
- Around-the-pump proportioners
- Fixed and portable In-line venturi type inductors
- Fixed or handline nozzles with fixed induction/pick up tubes

## Storage and Shelf Life

TOWALEX FFFP 3% has an operational temperature range of -10°C and +60°C. Limited exposure to temperatures above +60°C does not affect the firefighting performance.

When stored in the packaging supplied (polyethylene drums or pails) within the temperature limits specified, or in equipment recommended by the manufacturer as part of the foam system, the shelf life of TOWALEX FFFP 3% Film Forming Fluoroprotein Foam Concentrate is generally in excess of 10 years.

The factors affecting shelf life and stability for SKUM foam agents are discussed in detail in our Technical Bulletin for storage recommendation.

If the product is frozen during storage or transportation, the concentrate should be thawed and used without any degeneration of the performance.

## Safety and Handling

See our corresponding "Material Safety data sheet".

## Compatibility

There are no specifications or standards which address the subject of compatibility of different manufacturer's brands of film forming fluoroprotein foam concentrates. In an emergency or if the manufacturer has supporting test data to substantiate that the mixture meets the same requirements as the individual component concentrates, they may be mixed together in the same storage vessel.

Different types of foam concentrates, i.e., AFFF (Aqueous Film Forming Foam) and FFFP (Film Forming FluoroProtein) base should not be mixed under any circumstances.

For more information regarding specific guidelines about construction materials, please email [info@skum.com](mailto:info@skum.com)

## Quality Assurance

TOWALEX FFFP 3% – as with all TYCO Products is subject to very stringent quality controls throughout all stages of production, from incoming raw to the complete product and is manufactured in an ISO 9001:2008 controlled facility. Quality assurance is therefore guaranteed.

## Typical Properties at 20°C

■ TOWALEX FFFP 3%	FFFP 3%
■ Fire Classes	A and B
■ Shape and colour	Brown clear liquid
■ Smell	Characteristic, Protein
■ Density (20°C)	1.16 ±0.02 [g/ml]
■ pH (concentrate, 20°C)	6.0 - 8.0
■ Viscosity 20°C	10.0 ±4.0 [mm <sup>2</sup> /s]
■ Sediment (EN 1568)	≤ 0.25 [%]
■ Admixing ratio	3 [% Vol.]
■ Expansion Ratio (EN 1568-3)	≥ 7.0
■ Drain Time 25%, (20°C, EN 1568-3)	≥ 2:30 [min:s]
■ Drain Time 50%, (20°C, EN 1568-3)	≥ 4:00 [min:s]
■ Expansion	Low, (Medium)
■ Freezing Point	≤ -15 [°C]
■ Pour Point	≤ -12 [°C]
■ Recommended storage/ Usage temperature	-10 to +60 [°C]

## Ordering Information

TOWALEX FFFP 3% can be supplied in cans, drums, totes or Bulk (contact us for Bulk delivery).

<u>Part No.</u>	<u>Description</u>
■ F403122C1	25 Litre can
■ F403122D1	200 Litre drum
■ F403122T1	1000 Litre tote
■ F403122B1	Bulk

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