

## TOWALEX ARC 3x3 PLUS AFF-AR 3% Foam Concentrate

### Features

- 3% alcohol resistant concentrate
- EN1568, IMO 1312, ICAO level B Approved
- Freeze protected to -10°C
- For use on both hydrocarbon and polar solvents
- For use with air aspirating and 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 ARC 3x3 PLUS is a newly formulated firefighting foam agent multi-application using latest chemistry technology from special fluorochemical and hydrocarbon surfactants, a high molecular weight polymer, and solvents.

It is intended for use as a 3% proportioned solution (3% = 3 litres of foam with 97 litres of water) on both polar solvent and hydrocarbon fuels in fresh, salt or hard water.

### Performance

TOWALEX ARC 3x3 PLUS is measured against the highest specifications and standards such as the European EN1568 latest edition 2008, the new IMO MSC 1312 Marine standard and ICAO level B performance that allow this foam to be used against CAP 437 standard on helideck platforms onboard chemical tankers.

There are three fire extinguishing mechanisms in effect when using TOWALEX ARC 3x3 PLUS, 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 vapour.

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.



### Application

TOWALEX ARC 3x3 PLUS can be used by most conventional foam equipment such as:

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

TOWALEX ARC 3x3 PLUS is a non-Newtonian fluid that is both pseudoplastic and thixotropic. Because of these properties, dynamic viscosity will decrease as shear increases.

TOWALEX ARC 3x3 PLUS can be used with both air aspirating and non-aspirating discharge devices.

To provide even greater fire protection capability, it may 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.

TOWALEX ARC 3x3 PLUS has been tested using sea water and can be used without an increase in the application rate. 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 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. Medium expansion discharge devices produce typical expansion ratios between 20:1 to 60:1 depending primarily upon type of device and operating conditions.

## Approvals

The fire performance of TOWALEX ARC 3x3 PLUS is measured and listed according to:

- EN1568 : 2008 Part 1, 2, 3 and 4
- IMO Msc Circ. 1312 and MED B - D
- ICAO Level B
- GOST-R (Russia)
- Meet EPA 2015 directive



## Storage and Shelf Life

TOWALEX ARC 3x3 PLUS has an operational temperature range of -8°C and +50°C. Limited exposure to temperatures above +60°C does not affect the firefighting performance.

When stored in the packaging supplied (polyethylene drums or cans) or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life of TOWALEX ARC 3x3 PLUS Concentrate is about 20-25 years.

The factors affecting shelf life and stability for SKUM foam agents are discussed in detail in our Technical Bulletin 11A 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".

## Materials of Construction Compatibility

Tests have been performed with TOWALEX Concentrate verifying its compatibility with standard carbon steel "black" pipe and pipe manufactured from various stainless steel or brass compounds.

Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction.

Refer to our Technical Bulletin 13A, addressing acceptable materials of construction for use with SKUM foam concentrates.

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

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

## Quality Assurance

TOWALEX ARC 3x3 PLUS – 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 ARC 3x3 PLUS	AFFF-AR 3x3
■ Fire Classes	A and B
■ Shape and colour	Pale yellow clear liquid
■ Smell	Characteristic, surfactant-alike
■ Density (20°C)	1.05 ±0.02 [g/ml]
■ pH (concentrate, 20°C)	7.5 ±0.5
■ Viscosity 20°C (*)	1800 ±200 [Cps]
■ Sediment (EN 1568)	≤ 0.1 [%]
■ Admixing ratio	3 [% Vol.]
■ Expansion (EN 1568-3)	≥ 8.0
■ Drain Time 25%, (20°C, EN 1568-3)	≥ 6:00 [min:s]
■ Drain Time 50%, (20°C, EN 1568-3)	≥ 10:00 [min:s]
■ Expansion	Low, Medium, (High)
■ Freezing Point	≤ -13 [°C]
■ Pour Point	≤ -10 [°C]
■ Recommended storage/ Usage temperature	-8 to +50 [°C]

\* Brookfield speed 60 rpm, spindle #3

## Ordering Information

TOWALEX ARC 3x3 PLUS can be supplied in cans, drums, totes.

<u>Part No.</u>	<u>Description</u>
■ F113165C2	20 Litre can
■ F113165C1	25 Litre can
■ F113165D1	200 Litre drum
■ F113165T1	1000 Litre drum