

## Alcohol resistant - Aqueous film-forming multi-purpose (AR-AFFF) foam concentrate for Hydrocarbons and Polar Solvent Fires at 3%

### Product description

**HYDRAL AR 3-3** is a synthetic foam concentrate based on surfactant, fluorosurfactant, polymer and fluoropolymer. The foam forms a film of water on hydrocarbons and in addition a polymer film on polar solvents.

**HYDRAL AR 3-3**, alcohol resistant and aqueous film forming foam (AFFF) concentrate, is ideally suitable for extinguishing fires involving polar and/or foam-destroying liquids such as alcohols, esters, ketones, amines and also hydrocarbon fires involving petrol, gas turbine, fuel or oil.

### Performances

For fires involving foam-destroying liquids we recommend a proportioning rate of 3% (v/v) of **HYDRAL AR 3-3** and a gentle indirect application of the foam, for example using foam deflectors so that the polymer film can become fully effective.

**HYDRAL AR 3-3** is especially suitable to extinguish rapidly large surface hydrocarbon fires; the foam has excellent flow properties at a proportioning rate of 3% (v/v) and can be applied direct to the fire surface.

**HYDRAL AR 3-3** 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 inductor
- Fixed or handline nozzles with fixed induction/pick up tubes

### Application

**HYDRAL AR 3-3** is used wherever it is essential to extinguish a fire rapidly to save human lives and to avoid high material losses. Examples for its use is Chemical vessels, Jetties, chemical plants, drilling rigs... Its use is also widely recognized and installed into sprinkler foam systems.

**HYDRAL AR 3-3** is also very effective when subsurface injection is used to fight tank fires. Due to its fluorinated surfactants content the foam absorbs only small quantities of hydrocarbons.

**HYDRAL AR 3-3** is compatible with all foam-compatible dry chemical extinguishing powders. Sea water can be used without an increase in the application rate.

### Approvals

**HYDRAL AR 3-3** is approved according to:  
IMO Msc Circ. 582  
IMO Msc Circ. 799



### Storage and shelf life

**HYDRAL AR 3-3** has an operational temperature range of  $-7^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$ . Limited exposure to temperatures above  $+60^{\circ}\text{C}$  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 **HYDRAL AR 3-3** Concentrate is about 20-25 years.

The factors affecting shelf life and stability for HYDRAL 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".

### Materials of Constructions Compatibility

Tests have been performed with HYDRAL 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, addressing acceptable materials of construction for use with HYDRAL foam concentrates.

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

Please first consult Tyco for specific guidelines concerning materials of construction.

### Quality insurance

**HYDRAL AR 3-3** – as with all TYCO Products – is subject to a very stringent quality controls throughout all stages of production, from incoming raw to the complete product and is manufactured in an ISO 9001:2000 controlled facility. Quality assurance is therefore guaranteed.

### Typical properties

<b>HYDRAL AR 3-3</b>	AR-AFFF
<b>Fire Classes</b>	A and B
<b>Shape and color</b>	Dark amber clear liquid
<b>Smell</b>	Characteristic, surfactant-alike
<b>Density (20°C)</b>	1,06 ±0.02 [g/ml]
<b>pH (concentrate, 20°C)</b>	7,5 ±0.5
<b>Viscosity 20°C (*)</b>	1500 ±200 [Cps]
<b>Sediment (EN 1568)</b>	≤ 0,1 [%]
<b>Admixing ratio</b>	3 [% Vol.]
<b>Expansion Ratio (EN 1568-3)</b>	≥ 8,0
<b>Drain Time 25%, (20°C, EN 1568-3)</b>	≥ 5:00 [min:s]
<b>Drain Time 50%, (20°C, EN 1568-3)</b>	≥ 9:00 [min:s]
<b>Expansion</b>	Low, Medium, (High)
<b>Freezing Point</b>	≤ -12 [°C]
<b>Pour Point</b>	≤ -10 [°C]
<b>Recommended storage/Usage temperature</b>	-7 to +60 [°C]
* Brookfield speed 60 rpm, spindle #3	

### Ordering information

**HYDRAL AR 3-3** can be supplied in cans, drums or totes.

Part No. F113314C1	25 Liter can
Part No. F113314D1	200 Liter drum
Part No. F113314T1	1000 Liter tote