

# HYDRAL AR

## 3%, 6% Alcohol Resistant Aqueous Film Forming Foam (A.F.F.F.-A.R.)

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### CONCENTRATION ON ALCOHOLS CONCENTRATION ON HYDROCARBONS FIRES

- QUICK FIRE CONTROL
  - LOW AND MEDIUM EXPANSION
  - IDEAL FOR PROMPT INTERVENTION
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**HYDRAL-AR** is an alcohol resistant AFFF based on fluorosurfactants, polysaccharides and tensides, perfect to extinguish fires at 3% proportioning rate on hydrocarbons and 6% on polar solvents. The aqueous film develops differently according to the type of flammable liquid, thanks to the chemical/physical reaction of its components.

**HYDRAL-AR**, when applied at 6% on polar solvents, develops a polymer film covering the fuel surface, whereas used at 3% it will form an aqueous film preventing hydrocarbon evaporation.

While providing excellent fire knock-down and burn-back resistance, **HYDRAL-AR** shows a greatly improved stability when stored at high temperatures and a decreased change in viscosity when temperature is below 0°C. Maximum temperature for prolonged periods should not exceed 50°C. At low temperatures **HYDRAL AR** solidifies but thawing would restore original properties and performances.

#### SHELF LIFE

A minimum shelf life of 5 years can be expected if properly stored in its original containers.

#### DISPOSAL

Through any ordinary Waste Water Treatment plant.

#### PACKING

Available, on request, in 25, 200 and 1000 liters plastic packaging and 200 liters steel drums.

#### EFFECT OF DIFFERENT FLAMMABLE LIQUIDS ON HYDRAL-AR FOAMS

Indications described in the NFPA Handbook apply as general guideline. Main flammable liquids are listed in increasing order of destroying effect based on volatility, polarity and water solubility

CLASS I	CLASS II	CLASS III
Kerosene	Hexane	Isopropyl ether
Toluene	Isobutyl alcohol	Acetone
Heptane	Gasoline	Isopropyl alcohol
Butyl-esters	Ethyl acetate	Terbutyl alcohol
Butyl-cellosolve	Methanol	Diethyl ether
MTBE	Ethanol	Propylene oxide

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## HYDRAL AR Alcohol resistant A.F.F.F.

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Appearance

Specific gravity at 15°C (gr./cm<sup>3</sup>)

Viscosity (Brookfield mPa/sec)

- at 20°C
- at 0°C
- at -5°C

Pour Point (°C)

Neutrality (pH) at 20°C

Compatibility with sea water

Corrosion:

- Steel (C10-UNI2953)
- Stainless steel (AISI 304)
- Steel (Al 2024-3003)

Biodegradability

Toxicity

Expansion ratio (ISO-UNI 86 foam nozzle):

- low
- medium

ISO drainage time 25 % (minutes)

Recommended proportioning and application rates:

- CLASS I
- CLASS II
- CLASS III

## Chemical-physical Properties: 3% - 6%

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Brown viscous liquid

1.04 – 1.08

1000 max.

1500 max.

2000 max.

-12 ± 2

6.5 – 8.5

excellent

< 0.5 gr.m<sup>2</sup>/day

< 0.5 gr.m<sup>2</sup>/day

< 0.5 gr.m<sup>2</sup>/day

> 90%

harmless on skin and mucous membrane

*3% proportioning*

6 – 8

40 - 80

*6% proportioning*

8 - 10

40 - 80

*3% proportioning*

4 - 6

*6% proportioning*

6 - 8

*% volume*

2 – 5

3 – 6

5 – 7

*lt./min.m<sup>2</sup>*

2 – 4

3 – 5

4 – 8