

SABO
FOAM

HYDRAL NFF 3-3 UL201 Non-Fluorinated Alcohol Resistant Firefighting Foam Concentrate



The power behind **your mission**

Johnson
Controls 

Redefining Performance

For decades Aqueous Film-Forming Foams (AFFFs) containing fluorochemicals have set the performance standard for Class B fire and vapor suppression. Recently the industry has expanded foam concentrate offerings to include non-fluorinated products for Class B fuel fires, with the demanding challenge of delivering AFFF-like efficacy.

Setting a New Standard

Introducing the patent-pending technology of SABO FOAM HYDRAL NFF 3-3 UL201 foam concentrate which sets a new standard for non-fluorinated Class B firefighting:

- Independent, 3rd-party verified to achieve the same application rate as a UL 162 listed Alcohol Resistant Aqueous Film-Forming Foam (AR-AFFF) for control and extinguishment of hydrocarbon fuel fires
- EN 1568-1,-3,-4:2018 fire tested on hydrocarbon and polar solvent fuels with ratings typical of an AR-AFFF
- Effective control and suppression on hydrocarbon fuel fires at expansion ratios as low as 3 to 1 – supporting utilization of standard, non-aspirated nozzles and hand-lines for many applications
- Viscosity similar to a quality 3x3 AR-AFFF, enabling application with most properly-calibrated proportioning and discharge response devices and reducing the need for significant hardware changes
- Class-leading, cross-functional performance for fire knock-down and control; long-lasting foam blanket for extended post-extinguishment burn-back resistance and vapor suppression
- Flexible response with 3% proportioning in fresh, brackish, or salt water for both hydrocarbon and polar solvent Class B hazards

This isn't a lightweight AFFF product.

This isn't a mandate to change foam firefighting response hardware.

This isn't an untested experiment.

This isn't a non-compliant product from a no-name startup.

This isn't a concession.

This is Non-Fluorinated Foam Fire Suppression: Redefined.



HYDRAL NFF 3-3 UL201 firefighting foam concentrate is UL listed with various bladder tanks, proportioners, nozzles, and other discharge devices. Consult the UL listing for complete details.

This foam is well-suited for use in applications such as:

- Municipal and Industrial Response for spill and limited scale Type III hazards
- Foam systems with Type II discharge devices

HYDRAL NFF 3-3 UL201 concentrate is defined as a non-fluorinated firefighting foam concentrate, produced in equipment free from the use of PFAS chemistry. Since this product is free from any intentionally added PFAS chemistry and precautions have been taken to avoid PFAS contamination, it inherently complies with Directives (EU) 2017/1000 on PFOA and 2019/1021 (EU POPs directive) as a non-fluorinated product.



Industry Leading Performance

The HYDRAL NFF 3-3 UL201 foam concentrate is rated in accordance with the EN 1568:2018 standard as follows: Part 1 fulfilled, Part 3 1A/1A, and Part 4 1A/1A for acetone and 1B/1A for isopropanol. Like all non-fluorinated firefighting foam concentrates, HYDRAL NFF 3-3 UL201 foam concentrate is UL 162 tested and listed as a Synthetic Foam. Per this UL standard, the minimum design application rate for this foam is 6.5 lpm/m² for Type III hydrocarbon fuel fires.

In addition to the Synthetic Foam listing, this foam passed – under independent 3rd party witness – the much more challenging UL 162 Type III test protocol for an AFFF. This protocol utilizes a foam application test rate of 1.6 lpm/m², which is 33% less than the application rate for the UL 162 Synthetic Foam test. Under this more challenging protocol, an AFFF with the same demonstrated performance as the NFF 3-3 UL201 foam would attain a minimum application design rate of 4.1 lpm/m² for all Type III hydrocarbon fuel fires.

UL 162 Test Protocol for Type III Hydrocarbon - Forceful Application	HYDRAL NFF 3-3 UL201 Foam Application Rates lpm/m ² (gpm/ft ²)			
	Hydrocarbon Fuel		Premium Gasoline Fuel	
	Test Rate	Minimum Design Rate	Test Rate	Minimum Design Rate
UL 162 Synthetic Foam Test	2.4 (0.06)	6.5 (0.16)		
UL 162 AFFF Test (Witnessed by Independent 3rd Party)	1.6 (0.04)	4.1 (0.10)	2.4 (0.06)	6.5 (0.16)

NFPA 11 requires a minimum design application rate of 4.1 lpm/m² on hydrocarbon fuel spill fires, and the 3rd party witnessed testing supports the use of HYDRAL NFF 3-3 UL201 3% proportioned foam at this application rate.

NFPA 11 and UL 162 require a minimum design application rate of 6.5 lpm/m² for non-fluorinated foams on Type III hydrocarbon fuel in depth fires. HYDRAL NFF 3-3 UL201 foam

has demonstrated an increased safety factor at this required application rate with its successful, witnessed test performance extinguishing Type III hydrocarbon fuel fires at the lower minimum application rate of an AFFF.

HYDRAL NFF 3-3 UL201 performs well and is UL listed with E15 and several polar solvent fuels as well.

HYDRAL NFF 3-3 UL201 Foam UL 162 Synthetic Foam Application Listing*		Foam Application Rates lpm/m ² (gpm/ft ²)	
		Test Rate	Minimum Design Rate
Type III Hydrocarbon - Forceful Application	Hydrocarbons	2.4 (0.06)	6.5 (0.16)
	E15 (15% Ethanol/85% Gasoline)	4.1 (0.10)	6.9 (0.17)
Type II Hydrocarbon - Gentle Application	Hydrocarbons	2.4 (0.06)	4.1 (0.10)
Type II Polar Fuels - Gentle Application	Alcohols	4.1 (0.10)	6.9 (0.17)
	Ethanol	2.4 (0.06)	4.1 (0.10)
	Ketones	4.1 (0.10)	6.9 (0.17)
	E85 (85% Ethanol/15% Gasoline)	3.7 (0.09)	6.1 (0.15)

* Refer to UL Product iQ directory for complete listing details.

Note: If any foam product is discharged into the environment, efforts should be made to control, contain and collect the discharge for proper disposal, while following all applicable laws, regulations, and codes. Further information regarding the use, discharge, and disposal of firefighting foams can be found at www.SABOFOAM.com.

About Johnson Controls

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, York®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabo Foam, Sabroe®, Simplex®, Ansul® and Grinnell®.

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