

DATA SHEET
#AFC187

NIAGARA 3-3
HIGH FLUIDITY AR-FFFP

Description

Niagara 3-3 is a superior quality Alcohol Resistant Film Forming Fluoroprotein (AR-FFFP) fire fighting foam concentrate for use at 3% on hydrocarbons and polar solvent liquid fires.

Cutting-edge chemistry has enabled special fluorocarbon surfactants to be combined with a protein base to produce fast control and extinguishment on hydrocarbons with a vapor-sealing aqueous film equivalent to that of a top quality synthetic AFFF. These surfactants "seal" the bubble against attack from polar solvents, providing a highly effective floating foam layer on a wide range of polar solvent chemicals. The protein base material provides a tough cohesive foam blanket with high resistance to heat and excellent post-fire security, for longer lasting protection against reignition when compared to detergent based AR type foams.

Niagara 3-3 does not contain any polymers that cause conventional AR type concentrates to be viscous. It is therefore easy to pour and is easily and accurately proportioned with portable inductors and fixed balanced pressure proportioners.

Features

- Easy pouring and easy induction down to 0°F (-18°C)
- Film-forming foam with fast knockdown
- Extremely low environmental impact
- Highly versatile and therefore eliminates the need to stock a variety of foam types
- Detergent-free for high resistance to fuel pick-up
- Foam blanket re-seals when disrupted by personnel or equipment
- Reduced stocks, low cost storage, long shelf life and low usage levels combine to provide maximum value
- UL listed for use at 3% on hydrocarbons and polar solvents

Applications

Niagara 3-3 is ideal for use in fire suppression systems and manual applications to fight broad range of Class B flammable liquid fires. It can be used in high-risk applications where hydrocarbons, such as crude oil, gasoline,

diesel fuel, and aviation kerosene, and polar solvents such as alcohols, ketones and esters are stored, processed or transported. Typical applications include municipal fire departments, hydrocarbon and polar solvent bulk storage tank protection, process areas, warehousing, road/rail loading racks, power stations, marine terminals and off-shore platform protection. Niagara 3-3 can also be used in combating Class A fires.

Approvals and Listings

- Underwriters Laboratories (UL)

Equipment

Niagara 3-3 is readily proportioned at all rates using conventional foam proportioning equipment such as portable and fixed (in-line) foam venturi proportioners, handline nozzles/branchpipes with pick-up tubes, balanced pressure variable flow proportioners, balanced pressure bladder tank proportioners and around-the-pump proportioners. Niagara 3-3 has Newtonian fluid characteristics for easy pouring from drums over a wide temperature range. It is also simple to pump using centrifugal pumps.

Niagara 3-3 can be used with non-aspirating devices such as spray nozzles, monitors and conventional sprinklers for effective use on Class A and shallow spill fires. However, non-aspirated application is not recommended as the primary method of attack for major fires where a stable foam cover is essential.

Air aspirating discharge devices such as low expansion branchpipes, monitors, top pourer sets, rimseal foam pourers, MEX Bund Pourers and foam/water sprinklers are all suitable for use with Niagara 3-3. As with any foam, Niagara 3-3 is best applied gently onto the burning liquid surface, but its exceptional resistance to fuel contamination enables it to withstand vigorous mixing with hydrocarbon fuels. This makes it suitable for forceful application onto large hydrocarbon storage tank fires from ground-based mobile monitors or through sub-surface injection systems.

Niagara 3-3 produces top quality medium expansion foam (MEX) when proportioned at 3% and applied through MEX branchpipes and MEX bund pourers.

Compatibility

Suitable for use in combination with:

- Soft, hard, brackish, saline or seawater
- Dry powder extinguishing agents, either separately or in twin agent systems
- Expanded foams (either protein or synthetic-based) for application simultaneously or sequentially to a fire

Typical Physical Properties

Appearance Dark Brown free-flowing liquid
Specific Gravity @ 68°F (20°C) 1.16
pH @ 68°F (20°C) 7.1
Viscosity @ 68°F (20°C) 18 csks
Viscosity @ 32°F (0°C) 47 csks
Viscosity @ 14°F (-10°C) 105 csks
Maximum Usable Temperature 120°F (49°C)
Minimum Usable Concentrate Temperature . . 0°F (-18°C)
Freeze Point 2°F (-19°C)
Freeze/Thaw No Effects on Concentrate Properties

Storage and Handling

Niagara 3-3 is ideally stored in its original containers or in tanks or other containers that have been designed for such foam storage. Foam concentrates are subject to evaporation that accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent the free exchange of air.

The recommended storage temperature range for Niagara 3-3 is 0°F (-18°C) to 120°F (49°C). Niagara 3-3 foam concentrate is not affected by freeze/thaw cycles.

Shelf Life, Inspection and Testing

Proper storage conditions and maintenance maximize the shelf life of any foam concentrate. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. The expected shelf life of Niagara 3-3 foam concentrate is 10 years or more when stored in sealed drums. Niagara 3-3 does not contain any polymers; therefore, it cannot suffer phase separation and has a very low risk of premature aging. Should the concentrate become contaminated, testing to ensure original foam concentrate physical properties is a service available from Kidde Fire Fighting. NFPA recommends the annual testing of foam concentrates to ensure reliability.

Environmental and Toxicological Information

Niagara 3-3 is biodegradable. However, as with any substance, care should be taken to prevent discharge from entering ground water, surface water, or storm drains. With advance notice, Niagara 3-3 foam concentrate or foam solution can be treated by local biological sewage treatment systems. Since facilities vary widely by location, advance notice should be given, and disposal should be made in accordance with federal, state, and local regulations.

Niagara 3-3 is virtually harmless to aquatic organisms. The 96-hour LC50 for Rainbow Trout is 2830 ppm. Niagara 3-3 is based on a natural protein foaming agent and does not contain any harmful synthetic detergents, glycol ethers, alkyl phenol ethoxylates (APE's), tolyltriazoles, or complexing agents. For further details see the Niagara 3-3 Material Safety Data Sheet.

Ordering Information

CONTAINER	SHIPPING WEIGHT	PART NUMBER	APPROXIMATE SHIPPING CUBE FT ³
5-Gallon Pails (Round) (19 liters)	51 lb. (23.2 kg)	3111-7340-6	1.13 cu. ft. (0.029 cu. m.)
55-Gallon Drums (208 liters)	554 lb. (251.8 kg)	3111-7481-6	11.51 cu. ft. (0.326 cu. m.)
275-Gallon IBC Reusable Tote Tank (1041 liters)	2797 lb. (1271.0 kg)	3111-7725-6	51.11 cu. ft. (1.061 cu. m.)
Per Gallon Bulk	9.65 lb. (1.16 kg)	3111-7001-6	

This information is only a general guideline. The company reserves the right to change any portion of this information without notice. Terms and conditions of sale apply and are available on request. 10/07 Rev. A Printed in USA AFC187.QXD

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