



Muni^{F3} Green Plus 3%

3% Synthetic Fluorine Free Foam

Alcohol Resistant Synthetic

NFC511

- ✔ Superior 3% synthetic fluorine free foam formulated to extinguish hydrocarbon fires including E15 gasolines.
- ✔ Specifically designed for the Municipal firefighter.
- ✔ UL/ULC Listed.
- ✔ Green Screen Certified.
- ✔ Formulated without intentionally added (PFAS), (PFOA), (PFOS), fluorosurfactants, fluoropolymers or organohalogens.
- ✔ Low viscosity to ensure easy induction.
- ✔ 100% Biodegradable.
- ✔ Formulated avoiding regrettable chemical substitutes such as chlorines, and siloxanes.
- ✔ Can be used on structural fires, Class A and B fires.



Muni^{F3} Green Plus 3% is a superior quality synthetic fluorine free foam concentrate, designed for municipal firefighters on Class A and B hydrocarbon fires. The UL/ULC listing for Muni^{F3} Green Plus covers various blends of gasoline from unblended (i.e. sport racing) through, E5, E10 and up to E15 (i.e. 15% ethanol/gasoline blend). Muni^{F3} Green Plus is GreenScreen certified, assuring that no regrettable chemical substitutes have been used in the formulation.

Muni^{F3} Green Plus 3% is a patented formulation producing a vapor sealing blanket of foam that rapidly spreads over the surface of the fuel to provide rapid control and extinguishment.

- Unique patented formulation only available from National Foam.
- Fluorine free – can be used where traditional fluorinated products cannot be used.

Standards and Approvals

- ✔ Underwriters Laboratories, Inc.
- ✔ Underwriters Laboratories of Canada.
- ✔ NFPA 11

Applications

Muni^{F3} Green Plus 3% is used in municipal fire risk situations where hydrocarbon

fuels (such as oils, gasoline, diesel fuel, and aviation kerosene) are stored or transported and can be used on oxygenated gasoline blends containing up to 15% ethanol. For fuel in depth fires, refer to our UniversalF3 Green 3% X 3% fluorine free foam concentrate data sheet (NFC510).

Muni^{F3} Green Plus 3% can also be used as a wetting agent in combating structural fires and fires in Class A materials such as wood, paper, and tires.

Muni^{F3} Green Plus 3% provides a vapor suppressing foam blanket on unignited hydrocarbon spills, exhibiting long drainage times.

Typical Physical Properties

Appearance.....	Pale Yellow Color
Specific Gravity at 68°F(20°C).....	1.03
pH @ 68°F(20°C).....	7.5
Viscosity@ 68°F(20°C).....	<2,000 cP*
Expansion Ratio.....	5:1**
25% Drainage Time.....	>90 minutes**
Lowest Use Temperature.....	35°F(2°C)
Max Continuous Storage Temperature.....	120°F(49°C)

*Brookfield #4 Spindle @ 60 rpm. Viscosity measured under different shear conditions will vary because of pseudoplastic rheology of this non-Newtonian product.

**Expansion ratio and 25% drainage time are typical values and are affected by accuracy of the foam proportioning device, the type of foam-making device, operating parameters, water quality and type, and atmospheric conditions.

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Equipment

Muni^{F3} Green Plus 3% is intended for use at 3% (3 parts concentrate to 97 parts of water) on hydrocarbons and polar solvents. Muni^{F3} Green Plus 3% is readily proportioned using conventional foam proportioning equipment such as portable and fixed (in-line) foam venturi proportioners, handline nozzles with pick-up tubes, around-the-pump proportioners, and on-board A/B proportioners.

Muni^{F3} Green Plus 3% should be used with air aspirating discharge devices. Devices include low expansion nozzles, monitors and fixed foam discharge devices.

Compatibility

Muni^{F3} Green Plus 3% is suitable for use in combination with soft or hard, fresh or brackish water.

Muni^{F3} Green Plus 3% should not be mixed with any other type of foam concentrate in long or short term storage. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of its firefighting capability. Most expanded foams are compatible for side-by-side application during an incident.

Environmental

Muni^{F3} Green Plus 3% has no intentionally added PFAS. Muni^{F3} Green Plus 3% is 100% biodegradable and is manufactured without any intentionally added fluorinated surfactants, fluorinated polymers, organo-halogens or siloxanes.

Muni^{F3} Green Plus 3% is biodegradable, however, as with any substance, care should be taken to prevent discharge from entering groundwater, surface water, or storm drains. Disposal of Muni^{F3} Green Plus 3% should be made in accordance with federal, state, and local regulations.

Storage

Muni^{F3} Green Plus 3% is ideally stored in its original shipping container or in tanks or other containers which have been designed for such foam storage. Recommended construction materials are stainless steel (Type 304L or 316), high density cross-linked polyethylene, or reinforced fiberglass polyester (isophthalic polyester resin) with a vinyl ester resin internal layer coating (50 -100 mils).

Foam concentrates are subject to evaporation which accelerates when the product is exposed to air. Storage tanks should be kept full, sealed and fitted with a pressure vacuum vent to prevent

free exchange of air. The recommended storage environment is within the temperature range of 35°F to 120°F (2°C to 49°C). Foam Seal Balls (hollow plastic spheres), 1-1/2" diameter, floated on top of atmospheric tanks in (2) layers, can be used to slow evaporation. (Refer to NF data sheet NFC940 for additional information)

Shelf Life, Inspection, and Testing

The shelf life of any foam concentrate is maximized by proper storage conditions and maintenance. Factors affecting shelf life are wide temperature changes, extreme high or low temperatures, evaporation, dilution, and contamination by foreign materials. National Foam firefighting foam concentrates have been tested and have not shown significant loss of performance even after 10 years or more, provided annual testing and proper storage recommendations are followed. Refer to National Foam technical bulletin NFTB240 for recommendations on foam concentrate storage and preservation.

Annual testing of all firefighting foam is recommended by the National Fire Protection Association (NFPA). National Foam provides a Technical Service Program to conduct such tests. Refer to National Foam product data sheet NFC960 for further details on Technical Service program.

Ordering Information

Container	Shipping Weight	Shipping Dimensions	Part Number
5-Gallon Pails (19 liters)	44.1 lb. (20.0 kg)	1.13 cu. ft. ³ (0.032 cu. m)	2198-3340-0
55-Gallon Drums (208 liters)	492 lb. (223.0 kg)	11.1 cu. ft. ³ (0.314 cu. m)	2198-3481-0
275-Gallon IBC Reusable Tote Tank (1041 liters)	2494 lb. (1131.0 kg)	48.2 cu. ft. ³ (1.365 cu. m)	2198-3725-0
330-Gallon IBC Reusable Tote Tank (1249 liters)	2990 lb. (1356.3 kg)	55.8 cu. ft. ³ (1.580 cu. m)	2198-3733-0

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National Foam operates a continuous programme of product development. The right is therefore reserved to modify any specification without prior notice and National Foam should be contacted to ensure that the current issues of all technical data sheets are used.

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