ASSURANCE
NATIONAL FOAM

Avio^{F3} Green KHC 3%

Fluorine Free (FF) Foam Concentrate

NFC515



- World's first film-forming fluorine free foam on aviation fuels (Jet A and Jet A-1).
- Avio^{F3} Green KHC 3% is a superior quality synthetic fluorine free (FF) foam concentrate, designed for extinguishing and securing flammable aviation fuel spills and fires (Jet A and Jet A1).
- 100% Biodegradable.
- AvioF3 Green KHC 3% is formulated without using PFAS, PFOA, Fluorosurfactants, Fluoropolymers or Organohalogens.
- Fast knockdown and extinguishment exceeding the requirements of ICAO Level C.
- Third party certified to meet the requirements of ICAO Level C.
- Passes Boeing D6-17487, Rev T Corrosion series as foam concentrate and 3% solution.
- Specifically designed for crash truck usage.
- Uses up to 40% less foam concentrate than ICAO Level "B" foam concentrates.

GREENSCREEN CERTIFIED SILVER
FIREFIGHTING FOAM 2.1 VERSION
20211156 CERTIFICATE NUMBER
cpa Clean Production Action

Avio^{F3} Green KHC 3% is a patent pending combination of surfactants and other ingredients and produces a vapor sealing blanket of foam that rapidly spreads over the surface of the fuel to provide rapid control and extinguishment.

- Unique patent pending formulation only available from National Foam.
- Film-forming to assist with fast knockdown and excellent burnback.
- Newtonian flow characteristics.
- Low viscosity for easy proportioning.
- Fluorine free - can be used where traditional fluorinated products cannot be used.

Standards and Approvals

- Certified to meet the requirements of ICAO Level C (MPA Dresden GmbH)
- NFPA 403
- NFPA 412
- NFPA 414

Applications

Avio^{F3} Green KHC 3% is used at 3% concentration in high risk situations where hydrocarbon fuels such as Jet-A, Jet-A1 and aviation kerosene are processed, stored or transported. It is not suitable for use on polar solvents or water miscible fuels such as alcohols, ketones, esters and ethers.

Avio^{F3} Green KHC 3% is designed to be used on Aviation Rescue Fire Fighting vehicles (ARFF), Rapid Intervention Vehicles (RIV) and airport crash trucks where fast extinguishment is essential for saving life. Avio^{F3} Green KHC 3% provides a vapor supressing foam blanket on Jet-A and Jet-A1 spills.

Avio^{F3} Green KHC 3% is an excellent alternative to standard Aqueous Film Forming Foam concentrates and is in compliance with the FAA Reauthorization Act of 2018 (Section 332), providing aircraft manufacturers and airports a fluorine-free alternative that meets the requirements of NFPA 403, Standard for Aircraft Rescue and Fire-Fighting Services at Airports. Avio^{F3} Green KHC 3% also meets the 8 conditions of Canadian Aviation Regulation (CARs) Section 303.08 exemptions to allow all Canadian airport operators to use performance specifications of the International Civil Aviation Organization (ICAO) International Standards and Recommended Practices, Annex 14 instead of the performance specifications set out in paragraph 323.08(1)(a) of Standard 323 – Aircraft Fire Fighting at Airports and Aerodromes (CAN/ULC-S560 or of CAN/ULC-S563).

Typical Physical Properties

Appearance	Clear Mobile Liquid
Specific Gravity at 68°F(20°C)	0.99-1.01
Viscosity @ 68°F(20°C)	60-100 cSt
Freezing Point	27°F(-3°C)
Lowest Use Temperature	35°F(2°C)
Max Continuous Storage Temperature	120°F(49°C)

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Approvals and Listings

Avio^{F3} Green KHC 3% meets and exceeds the requirements of ICAO Level C and is third-party certified to this performance level.

Equipment

Avio^{F3} Green KHC 3% is intended for use at 3% (3 parts concentrate to 97 parts water). Avio^{F3} Green KHC 3% is readily proportioned using conventional foam proportioning equipment.

Avio^{F3} Green KHC 3% should be used with aspirated devices. Where a fire or shallow spill is involved with fire, National Foam always recommends the use of aspirated foam where a stable foam blanket is essential.

Compatibility

Avio^{F3} Green KHC 3% is suitable for use in combination with:

- Potable and fresh water.
- Expanded protein-based or synthetic foams for application to a fire in sequence or simultaneously.
- Dry powder extinguishing agents either separately or as twin agent systems.

As required by NFPA 11, Avio^{F3} Green KHC 3% should not be mixed with other foam concentrates. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of fire fighting capability.

Environmental

Avio^{F3} Green KHC 3% contains no intentionally added fluorosurfactants, fluoropolymers, organohalogens or PFAS.

Avio^{F3} Green KHC 3% is 100% biodegradable, however, care should be taken to prevent discharge from entering groundwater, surface water, or storm drains. Disposal of Avio^{F3} Green KHC 3% foam concentrate or foam solution should be made in accordance with federal, state, and local regulations.

Storage

Avio^{F3} Green KHC 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). Refer to NFTB100 for further information.

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)	2193-3340-0
55-Gallon Drums (208 liters)	480.6 lb. (218.0 kg)	11.1 cu. ft.^{3} (0.314 cu. m)	2193-3481-0
275-Gallon IBC Reusable Tote Tank (1041 liters)	2428.5 lb. (1102.0 kg)	48.2 cu. ft.^{3} (1.365 cu. m)	2193-3725-0

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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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07/23 NFC515 (Rev K)