NATIONAL FOAM

DATA SHEET
#NFC200

AER-O-WATER® 1% AFFF
Foam Concentrate

Description

Aer-O-Water 1% is a superior quality aqueous film forming foam (AFFF) which is used at 1% concentration to extinguish fires in hydrocarbon fuels. Aer-O-Water 1% is suitable for use with most types of proportioning and discharge equipment.

AFFF foam concentrates are designed for rapid fire knockdown by producing a thin aqueous film which spreads across the surface of the fuel, separating the fuel from oxygen. This is accomplished by allowing the foam solution to quickly drain from the foam bubble which in turn, affects long term sealability and burnback resistance.

The aqueous film is produced by the fluorocarbon surfactant reducing the surface tension of the foam solution to a point where the solution can be supported by the surface tension of the fuel. The effectiveness of the aqueous film is directly influenced by the surface tension of the fuel. The film tends to be more effective on fuels with higher surface tension such as diesel and jet fuels, and less effective on fuels with lower surface tension such as hexane and gasoline.

Features

- Low energy input AFFF - requires minimal agitation.
- Excellent fluidity provides rapid “knockdown”.
- Suitable for use with fresh or sea water.
- Compatible with standard proportioning and foam making devices.
- Suitable for use with foam compatible dry powder extinguishing agents.

Applications

Aer-O-Water 1% is used at 1% concentration in fire suppression systems and manual applications to fight fires involving hydrocarbon fuels such as crude oil, gasoline,and fuel oils. It is not suitable for use on polar solvents or water miscible fuels such as alcohols, ketones, esters, and ethers. Typical installations include foam water sprinkler systems, aircraft hangars, loading racks, process areas, spills, etc. Aer-O-Water 1% is an excellent agent for use in aircraft rescue and fire fighting (ARFF) or other manual fire fighting applications where polar solvent fuels are not encountered. It can also be used as a wetting agent in combating Class A fires.

In general, AFFF foam concentrates may be used with non aspirating nozzles and sprinklers, however for best foam expansion and 25% drainage time all foam concentrates should be used with aspirating nozzles and foam making discharge devices.

Typical Physical Properties

Appearance	Light Amber Color
Specific Gravity @ 77°F (25°C)	1.08
pH	7.6
Viscosity	13.3 centistokes
Freezing Point	-19°F (-28°C)
Minimum usable concentrate temperature	20°F (-7°C)
Maximum usable concentrate temperature	120°F (49°C)

Approvals and Listings

- Underwriters Laboratories, Inc.
- Factory Mutual System

Aer-O-Water 1% has successfully passed UL-162 7th Edition test criteria for use at 1% concentration on hydrocarbon fuels using both fresh and sea water. The UL listings include application through a variety of proportioning and foam making discharge devices. Consult National Foam for a complete list of these devices.

Storage and Handling

Aer-O-Water 1% 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 sealed and fitted with a pressure vacuum vent to prevent free exchange of air. The recommended storage environment is within the UL-listed temperature range of 20°F to 120°F (-7°C to 49°C).

It is recommended that Aer-O-Water 1% not be mixed with any other type of foam concentrate in long-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.

Aer-O-Water 1% may be stored as a 1% premixed solution using fresh water. A biocide agent should be added to prolong storage life of the premix solution.

Aer-O-Water 1% is suitable for use in combination with foam compatible dry chemical extinguishing agents.

Shelf Life

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. Properly stored National Foam AFFF foam concentrates have been tested and shown no significant loss of firefighting performance, even after 15 years. Annual testing of all firefighting foams is recommended by the National Fire Protection Association (NFPA). National Foam provides a Technical Service Program to conduct such tests.

Environmental and Toxicological Information

Aer-O-Water 1% 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, Aer-O-Water 1% can be treated by local biological sewage treatment systems. Since facilities vary widely by location, disposal or discharge of Aer-O-Water 1% concentrate or foam solution should be made in accordance with federal, state and local regulations.

The Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) of Aer-O-Water 1% are as follows:

BOD5	Concentrate 533,000 mg/kg
COD	Concentrate 1,020,000 mg/kg

Results of tests for acute oral toxicity have proved negative. Aer-O-Water 1% is a primary skin irritant. Repeated skin contact will remove oils from the skin and cause dryness. Aer-O-Water 1% is a primary eye irritant, and contact with the eyes should be avoided. Users are advised to wear protective equipment. If Aer-O-Water 1% enters the eyes, flush them well with water and seek immediate medical attention. For further details, see the Aer-O-Water 1% Material Safety Data Sheet.

Ordering Information

CONTAINER	SHIPPING WEIGHT	PART NUMBER
5-Gallon Pail		
(19 litres)	48 lb. (21.8 kg.)	1131-1340-6
55-Gallon Drums		
(208 litres)	517 Lb. (235.0 kg.)	1131-1481-6
275-Gallon IBC Reusable Tote Tank		
(1041 Litres)	2618 lb. (1190 kg)	1131-1725-6
Bulk		
9.0 lb./gal. (1.08 kg/l)		1131-1001-6

Palletizing of pails and drums is available upon request.

SHIPPING CUBE

5- Gallon Pails ..... 1.13 cu. ft. (0.032 cu. m)

55- Gallon Drums ..... 11.51 cu. ft. (0.326 cu. m)

275- Gallon IBC Tote Tank ..... 51.11 cu. ft. (1.1061 cu. m)

03/03 (Rev B) Printed in USA (NFC200-AOW1.PMD)

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