

# HF-20

## HIGH EXPANSION FOAM

### DESCRIPTION

The composition of BoldFoam HF-20 is based on a mixture of synthetic hydrocarbonated surfactants together with solvents, stabilizers, anticorrosive agents and other additives

The aqueous solutions of this concentrate form a homogeneous foam with a high expansion index, a high drainage time and high heat resistance.

BoldFoam HF-20 is specially appropriated for indoor fires where the application of foam results in a reduction of oxygen by sweeping away the air and so suffocate the fire.

Furthermore, the water in the foam produces a cooling effect.

The concentration of use is 3% with fresh, sea or brackish water.

### APPLICATION

BoldFoam HF-20 can be used for Class A fires (solids) and Class B fires (liquids) using high and medium expansion devices.

Suitable for places as aviation hangars, ship engine room, solids warehouse (coal, wood, cardboard, paper, rubber, plastic...) for to protect with flooding.

According to its use and the quantity of water you want to add the required solutions are the following ones:

-Low Expansion, 1%: Indirect application is recommended due to the low oleophobicity of the foam caused by the absence of fluorinated surfactants in the concentrate. Use low expansion foam only in long distance firefighting.

-Medium Expansion, 2-3%: With medium expansion nozzles you can reach high expansion index and its use is only for medium distance firefighting filling the security pools of the fuel tanks with foam in case of a possible spillage.

-High expansion, 2-3%: With high expansion nozzles it can reach a high rate of expansion, achieving total filling of enclosed spaces.

In case the level of foam is higher than the height of a person you can stay in the foam pressing a cloth on the mouth to avoid inhaling the foam solution.

Do not apply on liquid polar fires.

Its excellent wetting characteristics make it ideal for fighting Class A fires.

BoldFoam HF-20 should be applied at its adequate concentration with aspirating systems to make use as much as possible of its wetting properties.

### DOSAGE

BoldFoam HF-20 can be easily proportioned using most conventional proportioning equipment such as:

\*Balanced pressure pump and bladder tank proportioners, around the pump type and venturis proportioners, and handline nozzles with fixed induction/pickup tubes.

### TYPICAL PHYSICAL PROPERTIES OF CONCENTRATE

Appearance	Clear Yellow Liquid
Density, 20°C g/cm <sup>3</sup>	1,030±0,05
pH, 20°C	8,0±0,5
Viscosity to 375 s <sup>-1</sup> (Brookfield), mPa.s	
• 20°C	≤30
Freezing Point	≤ -7°C

### PROPERTIES OF FOAM SOLUTIONS

Surface Tension, (3%, .D.W.), mN/m	≤ 25
High Expansion Rate (2%, F.W.)	≥ 300
Drainage Time, 25%	≥ 5'
Drainage Time, 50%	≥ 15'

\*D.W.: Deionized water / F.W.: Fresh water

### FIRE PERFORMANCE

BoldFoam HF-20 is qualified under the requirements of the EN 1568-1 and EN 1568-2 Standards.

### COMPATIBILITY WITH OTHER CONCENTRATES

The NFPA standard (NFPA 412, Paragraph 214 and NFPA 11B, 1-5.2) prohibits the mixing of AFFF concentrates unless it has previously been determined that they are compatible.

The MIL-F24385C standard provides a formalized method of compatibility determination but the Freeze Protected AFFF fall outside the military specification.

vs FOCUM recommends the following test: BoldFoam products are considered compatible in all proportions with the concentrates supplied by other manufacturers, when their mixture maintains its properties of foamability, film formation, sealability and fire performance to the same extent as the worst concentrate involved in the mixture, after an aging period of 10 days at 65°C at least.

Furthermore, the mixture should always be used with the higher induction and for the higher minimum temperature of use of the mixed concentrates.

BoldFoam HF-20 may simultaneously be applied to fires with other foam solutions and dry chemical fire fighting agents.

## **MATERIALS OF CONSTRUCTION COMPATIBILITY**

BoldFoam HF-20 is compatible with Standard Carbon Steel "black" pipe and pipe manufactured from various Stainless Steel or Brass Compounds. Other recommended materials are Polyethylene and Aluminum.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate can get in contact with them since corrosion will result.

## **SHELF LIFE**

The factors affecting shelf life and stability for this foam concentrate are the following: big temperature changes, handling procedures, extremely high or low temperatures and contamination by unknown materials.

Its shelf life is about 20-25 years if the storage is done according to the recommendations of vs FOCUM.

The premixed solutions storage is not recommended.

According NFPA 11 (12.6), samples of foam concentrates shall be sent to the manufacturer or qualified laboratory for quality condition testing at least annually.

## **STORAGE AND HANDLING**

BoldFoam concentrate should be stored in the original shipping containers or in other special containers specially designed for this type of products (stainless steel or epoxy lined tanks).

Place the storage containers in an area at temperatures between -5°C to 50°C.

If the product is frozen during storage or transportation, thawing will render the product completely usable. Mixing after freeze thaw cycle is recommended.

## **ENVIRONMENTAL/TOXICOLOGICAL PROPERTIES**

### **1.-Aquatic Toxicity.**

The aquatic life, neither sensitive species nor tolerant ones, is not adversely affected by the use of BoldFoam HF-20.

### **2.-Biodegradability.**

The theoretical biodegradability is measured with two different tests: BOD over a five day period and COD. The biodegradability is the ratio of BOD to COD: BOD/COD.

A concentrate is considered easily biodegradable when the ratio: BOD/COD is above 0,65. BoldFoam products are well above this level and so they are easily biodegradable.

### **3.-Sewage Treatment Plant Treatability.**

As BoldFoam products have a low biological oxygen demand (BOD), treatment plants don't need additional oxygen.

BoldFoam HF-20 is not particularly toxic to the microbial populations normally found in treatment plants.

Compatible with the treatment plant's flora Anti-foam agents may be used to reduce foaming in waste streams.

### **4.-Nutrient Loading.**

An algal bloom is not expected as BoldFoam HF-20 contains no sources of nitrates or phosphates. Furthermore, it is extremely low in total organic carbon.

## **ORDERING INFORMATION**

BoldFoam products are available in plastic Pail (20, 25 or 60 l), Drum (200 l.), Container (1000 l.) and Bulk.

