TECHNICAL INFORMATION

SILVARA APC 1
POLYVALENT FOAM
FLUORINE FREE

DESCRIPTION

Silvara APC 1 is a fluorine free foam for extinguishing hydrocarbon fuels, polar fuels and solids fires. It is a mixture of synthetic hydrocarbon surfactants together with solvents, stabilizers, anticorrosive agents and a high molecular weight polymer.

Silvara APC 1 is specially appropriated for indoor fires, where the application of foam results in a reduction of oxygen by sweeping away the air and so suffocates the fire.

APPLICATION

Silvara APC 1 can be used for Class A fires (solids) and Class B fires (hydrocarbon and polar fuels) using medium and low expansion devices.

The concentration of use for low expansion is 1% for hydrocarbon fires and solids and 3% for polar solvents with fresh, sea or brackish water and medium expansion.

It can be used with aspirating discharge devices (nozzles, foam chambers…), which results in higher expansion ratios and longer drainage time.

DOSAGE

Silvara APC 1 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.

PHYSICAL PROPERTIES OF FOAM CONCENTRATE

Appearance		Amber Liquid
Density, 20 ºC, g/cm^3		1,04 ± 0,01
pH, 20 ºC		7,5 ± 1
Viscosity (20 ºC), mPa·s		
375 s^{-1}	75 s^{-1}	
≤110	≤300	
Freezing Point		≤-4ºC

PROPERTIES OF FOAM SOLUTION

Surface Tension (1%, Deionized water), mN/m	≤35
Interfacial Tension (1%, cyclohexane), mN/m	≥1,5
Low expansion index (1%, fresh water)	≥ 5,0
Drainage Time 25%	≥1’

FIRE PERFORMANCE

Silvara APC 1 is certified according to standards:

- EN 1568-1:2008 (3%)
- EN 1568-3:2008 (1%) Class IB (fresh water)
- EN 1568-4:2008 (3%) Class IB (acetone, fresh water)

COMPATIBILITY WITH OTHER CONCENTRATES

VS FOCUM recommends the following test: Silvara 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 65ºC 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.

Silvara APC 1 may simultaneously be applied to fires with other foam solutions and dry chemical firefighting agents.

COMPATIBILITY WITH MATERIALS

Silvara APC 1 is compatible with Standard Carbon Steel “black” pipe and pipe manufactured from various Stainless Steel or Brass Compounds. Other recommended materials are Polyethylene and Aluminium.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact 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.

Annual testing of all firefighting foams is recommended by the National Fire Protection Association (NFPA) if the foam concentrate is not stored in its original container.

STORAGE AND HANDLING

Silvara APC 1 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 -2ºC to 50ºC.

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

ENVIRONMENTAL AND TOXICOLOGICAL PROPERTIES

1.- Aquatic Toxicity.

The aquatic life is not adversely affected when Silvara APC 1 is used, neither sensitive species nor tolerant ones.

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. Silvara products are well above this level and so they are easily biodegradable.

Silvara APC 1 has also undergone a Total Fluor analysis.

3.- Sewage Treatment Plant Treatability.

As Silvara products have a low biological oxygen demand (BOD), treatment plants do not need additional oxygen.

Silvara APC 1 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 Silvara APC 1 contains no sources of nitrates or phosphates. Furthermore, it is extremely low in total organic carbon.

ORDERING INFORMATION

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