



## TECHNICAL INFORMATION

# SILVARA APC FLUORINE FREE FIRE FIGHTING FOAM MULTIEXPANSION - CLASS A, B, 3x3%

### 1. DESCRIPTION

Silvara APC is a fluorine free multiexpansion foam (high, medium and low expansion) useful for extinguishing hydrocarbon fuels and polar solvent fuels. It is a mixture of synthetic hydrocarbon surfactants together with solvents, stabilizers, anticorrosive agents and a high molecular weight polymer.

Silvara APC forms resistant foam with a high drainage time, it isolates the fuel from the oxygen and extinguishes the fire.

It is suitable for use at 3% with fresh, sea or brackish water, being appropriate for fires Class A, Class B (hydrocarbons) at 3% and Class B (polar fuels) at 3%.

### 2. APPLICATION

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

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

### 3. DOSAGE

Silvara APC 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.

### 4. PHYSICAL PROPERTIES OF FOAM CONCENTRATE

Appearance	Amber Liquid
Density, 20°C, g/cm <sup>3</sup>	1,020 ± 0,01
pH, 20°C	8,0 ± 1,0
Viscosity (Brookfield HADV-II+CP40), 20°C, mPa·s	
	$\frac{375 \text{ s}^{-1}}{80-100} \quad \frac{75 \text{ s}^{-1}}{240-290}$
Freezing Point, °C	≤-3

### 5. PROPERTIES OF FOAM SOLUTION

Induction rate	3%
Surface Tension, mN/m (3%, deionized water)	≤ 35
Interfacial Tension, mN/m (3%, cyclohexane)	≥ 1,2
Low expansion index (3%, fresh water)	≥ 6,5
Drainage Time 25%	≥ 7'
High expansion index (3%, fresh water)	≥ 300
Drainage Time 25%	≥ 4'
Drainage Time 50%	≥ 8'

### 6. FIRE PERFORMANCE

Silvara APC has been certified by MPA Dresden under the following standards:

- EN 1568:2018-4 (Acetona, IA; IPA, IA).

Silvara APC fulfils the requirements of the following standards: EN 1568:2018 parts 1, 2 and 3 at 3% in fresh water.

## 7. 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 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.

## 8. COMPATIBILITY WITH MATERIALS

Silvara APC 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.

## 9. SHELF LIFE

The stability and durability of the Silvara APC can be impaired by improper storage.

Its shelf life is about 10 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.

## 10. STORAGE AND HANDLING

Silvara APC 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 -1°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.

## 11. ENVIRONMENTAL AND TOXICOLOGICAL PROPERTIES

**Aquatic Toxicity:** Silvara APC at concentration of use is “Relatively Harmless” for species as Daphnia, Fish and Algae.

**Persistence and Degradability:** Silvara APC does not contain persistent organic substances. Silvara APC is a fluorine-free and siloxane-free foam concentrate. It is expected that Silvara APC should have excellent biodegradability.

**Sewage Treatment Plant Treatability:** Silvara products are 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.

**Nutrient Loading:** An algal bloom is not expected as Silvara products contain no sources of nitrates or phosphates. Furthermore, it is extremely low in total organic carbon.

## 12. ORDERING INFORMATION

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

