SILVARA K1
FIRE FIGHTING FOAM CLASS A, B

1. DESCRIPTION

Silvara K1 is a fluorine free low viscosity Newtonian foam concentrate to extinguish hydrocarbon fuels fires and solids.

Silvara K1 is formulated with solvents, hydrocarbon surfactants and additives. Silvara K1 does not contain any type of organ halogen compound, it is easily biodegradable and responsible with the environment.

When Silvara K1 is used at 1% in fresh water, the foam exhibits an excellent fluidity, oleophobicity and heat resistance; this makes it especially suited to attack the fires of aviation fuel (Jet A1).

Silvara K1 forms resistant foam to isolate the fuel from the oxygen and extinguish the fire.

2. APPLICATION

Silvara K1 should be used at 1,0% in water to extinguish class B fires (hydrocarbons fuels). It is not suitable to use on polar fuels.

It should be used with aspirating discharge devices (foam chambers, nozzles…) with low or medium expansion.

Application of Silvara K1 by foam achieves excellent extinguishing and reignition times in hydrocarbon fuels fires. Obviously, since it is not a film forming foam, the application with fog/stream nozzles is not as effective as with AFFF foam concentrates.

3. DOSAGE

Silvara K1 can be easily proportioned using most conventional proportioning equipment such as: Balanced pressure pump and bladder tank proportioners, around the pump type and ventures proportioners, and handline nozzles with fixed induction/pickup tubes.

Recommended concentrations to use are:

Hydrocarbons, low expansion	1,0%

4. PHYSICAL PROPERTIES OF FOAM CONCENTRATE

Appearance	Amber liquid
Density, 20ºC, g/cm^3	1,025 ± 0,01
pH, 20ºC	7,5 ± 1,0
Kinematic Viscosity, mm^2/s, 20°C	≤ 35
Freezing point	≤ -15° C

5. PROPERTIES OF FOAM SOLUTION

Surface tension, mN/m (1,0%, deionized water)	≤ 30
Low expansion index (1,0%, fresh water)	≥ 7,0

6. FIRE PERFORMANCE

Silvara K1 is certified by MPA Dresden according to ICAO Standard: Level B (1% fresh water)

Silvara K1 fulfils the requirements of the EN 1568-3:2018 standard (1,0%, fresh water).

7. COMPATIBILITY WITH OTHER CONCENTRATES

The NFPA standards (NFPA 412, Paragraph 214 and NFPA 11B, 1-5.2) prohibits the mixing of AFFF concentrates unless it has 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: Silvara products are considerate compatible in all proportions with the concentrates furnished by other manufacturers when the mixture of them, after having been aged 10 days at 65°C, maintain its properties of foamability and fire performance at least equal of the worst concentrate involved in the mixture and to use the higher induction rate and to the higher minimum usable temperature of the mixing concentrates.

8. COMPATIBILITY WITH MATERIALS

Silvara K1 is compatible with Standard Carbon Steel “black” pipe and pipe manufactured from various Stainless Steel (304 and 316) or Brass Compounds. Other recommended materials are Polyethylene and Aluminium. Avoid using galvanized pipes and fittings, it can cause corrosion.

9. SHELF LIFE

The factors affecting shelf life and stability for this foam concentrate are: wide temperature changes, handling procedures, extreme high or low temperatures and contamination by odd materials.

Its shelf life is about 20-25 years if the storage is in accordance with VS FOCUM’s recommendations. 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 concentrate should be stored in the original shipping container or in other special containers designed for this type of products (stainless steel or epoxy lined tanks).

Place the storage container in an area at temperatures between –13°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: It is expected that aquatic life is not adversely affected at the dosage rate when Silvara products are used, neither sensitive species nor tolerant ones.

Persistence and biodegradability: Silvara K1 does not contain organic persistent substances. Silvara K1 is a fluorine-free foam.

Silvara K1 is easily biodegradable.

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. PACKAGING

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