

## **Facts About the ESS Fire Systems Aqueous Film Forming Foam**

AFFF is a water based synthetic animal protein solution that is lighter than oil, alcohol, and petroleum products. When properly mixed and aerated into foam, it will create a floating film on flammable materials that prevents fumes from igniting or re-igniting after a fire. It has been in use by the military, airports, and fire departments for years and has always been an effective fire fighting agent. It is a biodegradable solution that leaves virtually no residue, and can safely be cleaned off with water. ESS Fire uses a 6% solution of AFFF that is rated for all petroleum, methanol, and alcohol fires.

### **How does it work?**

In the past the foam was created at the nozzle by aerating the liquid solution with the available oxygen. All other AFFF racing fire systems in use today follow this method. These are pre-pressurized with air, nitrogen, or other gases to force the liquid from the cylinder to the nozzle(s).

ESS Fire has created a patented non-pressurized system that creates the foam in the cylinder before it is sent to the nozzle. The propellant is liquid CO<sub>2</sub>, a firefighting agent on its own, in a cartridge on the outside of the cylinder. The propellant is injected into the liquid creating this foam at a consistency of shaving cream. Another advantage to the ESS Fire system is that the pressure remains constant as the system is activated. Pre-pressurized systems are losing pressure as they begin to work and the foam retracts from the target area toward the nozzles as the pressure drops. Ours maintains an internal pressure of about 600psi as the CO<sub>2</sub> is metered into the cylinder and continues a full stream until the foam is depleted.

### **What about maintenance and recharging?**

The shelf life for our AFFF concentrate is 25 years, as recommended by the manufacturer. In a mixed solution your system will remain potent for at least 10 years but it should be checked every 5-7 years. Needless to say, the system will remain useable longer than most sanctioning bodies will allow. Since our systems can be re-charged for under \$70, this should not be an issue. Since this is not a pre-pressurized system, there are no seals to replace, propellant losses, gas loss, or hazardous handling charges. Comparable systems will cost you \$200-\$300 for a recharge or re-certification and require a down time usually measured in weeks not minutes.

ESS Fire is the only user rechargeable fire system available that comes with everything to get you back on the track in minutes. The cylinder only needs to be removed from the vehicle (using the t-bolt brackets), discard the old CO<sub>2</sub> cartridge, screw in the fresh one, unscrew the head and replace the non-fracturing head seal, fill with water, add the concentrate, and put the head back on. The entire recharge can usually be performed in less than 20 minutes. A recharge kit comes with the fresh cartridge, head seal, and concentrate - just add water.

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