

Phos-Chek WD881

Class A Foam



Class A Foam Specification

The Fire Department requests purchase of Class A foam concentrate. The following items shall be included in the purchase specification to vendors:

Chemical Specification

1. Shall be 0.1% to 1.0% concentrate
2. Shall not contain any U.S. EPA listed hazardous materials such as glycol ether
3. No flash or fire when tested via a closed cup method
4. Surface tension maximum: 28 dynes/cm of 0.6% water solution at 70 degrees Fahrenheit
5. Specific gravity: Maximum 1.03
6. Freeze and thaw: shall have no effect
7. Biodegradable
8. Foam concentrate water content less than 50%

Regulations

1. Shall meet NFPA 1150
2. Shall currently be on USDA Forest Service Qualified Products List (QPL) including approval for use in fixed tank helicopters
3. Shall be UL listed as a wetting agent at 0.1% use rate
NO EXCEPTIONS

Note to Purchasing

Vendors must include the following documents with their bid solicitation to validate product compliance with the above specification:

- U.S. Forest Service Qualified Products List
 - › **Product name included and approved for use in all categories**
- Underwriters Laboratory (UL) Wetting Agent Listing
 - › **Verify listing exists and that use rate is 0.1%**
- Material Safety Data Sheet (MSDS)
 - › **Under Regulatory Information Section- No SARA 313 chemicals**
- Outside laboratory test results showing water content percentage
 - › **Water content less than 50%**

If necessary, justification for the above specification can be obtained from the Fire Department.



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Since 1963, firefighters around the world have relied on Phos-Chek fire chemicals to help them fight fire.

Elite firefighters rely on Phos-Chek WD881 Class A foam concentrate to significantly enhance water's effectiveness.

Class A foam makes water more effective by reflecting heat, insulating fuel, increasing heat absorption, clinging to vertical surfaces and penetrating deep into burning fuel.

WD881 Class A foam enhances a firefighter's ability to fight fire fast. Foam provides faster knockdown and reduces the amount of water used to suppress a fire. Overhaul can be completed up to three times faster using WD881.

Phos-Chek WD881 is effective on all types of fires including structural, vehicle, tire and nuisance fires. It is also effective on coal mine fires, many industrial fires and running fuel fires.

In addition, WD881 works to neutralize bee stings, decontaminate chemical agents, and suppress toxic vapors. And for over 25 years, wildland fire agencies, including the USFS, have relied on WD881 for aerial attack and prescribed burning.

What is Phos-Chek Class A Foam and How Does it Work?

Water, as it is converted into steam, has tremendous capacity to absorb and carry away heat. Unfortunately, water's strong surface tension causes it to bead up and roll off most fuels and away from heat too fast to be able to absorb its full heat capacity.

Phos-Chek's unique combination of surfactants significantly reduces water's surface tension. As a result, water

containing low concentrations (0.1% to 1.0%) of Phos-Chek foam concentrate:

- Stretches out the water droplet into a bubble and holds it that way, increasing its heat absorbing surface
- Penetrates deep into Class A fuels
- Has an affinity for carbon. Phos-Chek bonds with carbon like a magnet holding the water against the fuel. It grabs onto smoke greatly increasing visibility and reducing knockdown time

- Reduces the amount of water needed to fight a fire because it uses it much more effectively. Using less water provides many benefits including:
 - › Less property damage
 - › Reduction of toxic products of combustion into the environment
 - › Preservation of fire scene for arson investigation
 - › Protects structures and fuels by blanketing the surface with bubbles
 - › Increases firefighter safety through quicker knockdown and increased overhaul properties

What Is Different About Phos-Chek Compared To Other Class A Foam Products?

Phos-Chek is the **most concentrated** Class A foam available today. Many other products contain significantly more water, up to 85%. Are you paying for foam concentrate or a bucket of water?



Phos-Chek has special properties and has passed third party laboratory testing criteria not matched by any other product. Phos-Chek:

- Passes and exceeds U.S. Government Environmental, Health, Safety and Corrosion standards and requirements by similar agencies around the world
- Contains no EPA listed hazardous materials
- Readily biodegrades in the environment and meets all technical requirements of the National Fire Protection Association (NFPA) Standard #1150
- Extinguishes both Class A and B fires- passing UL Wetting Agent tests at the following use rates:
 - › Class A fire - Ordinary combustibles; wood, paper, plastic, rubber at 0.1% or 1 gallon of concentrate per 1000 gallons of water

› Class B fire- Flammable liquid hydrocarbon; gasoline, diesel fuel, kerosene at 0.25% or 2.5 gallons of concentrate per 1000 gallons of water

- Smells like oranges. A proprietary ingredient only available in Phos-Chek WD881 Class A foam

OK, How Much Does It Cost?

About 3 cents per finished gallon of foam solution. We recommend starting percentages at .2%. This equates to 1 gallon of concentrate for every tank load (500 gallons) on your fire apparatus.



Wetter Is Better

Now that you understand the benefits of using Phos-Chek, we would like to give you some guidelines for use.

Less is more. Always use Phos-Chek at rates less than 1%. Using more just wastes concentrate. While we would like to sell you more foam concentrate, we are confident that once you see how well Phos-Chek WD811 works at low use rates, you'll buy no other product.

Always remember that it is still water that is removing the heat from the fire. Using lower Phos-Chek percentages takes advantage of its ability to lower water's surface tension, and soak into the fuel.

Higher (up to 1 %) percentages tie water up into a bubble mass that holds water and releases it very slowly; ideal for structure protection and wildland brush pre-treatment.

What Equipment Is Needed To Use Phos-Chek?

You can experience Phos-Chek in your fire apparatus as easily as Batch-Mixing. Just add 1 gallon to the booster tank (500 gallons) and proceed with operations. You will quickly see the benefit of using Phos-Chek. Batch mixing is inexpensive and simple, but continued fire flow on large incidents becomes difficult.

Direct Injection System is a discharge side injection pump that uses a flow sensor to measure water flow, controlled by a computer, to run a foam injection pump that injects foam concentrate into the outgoing water. These systems have been on the market more than 15 years and are

very accurate and reliable. We recommend these systems because they are very accurate and simple to operate, which is beneficial when injecting concentrate at the low rates we support.

Eductors are the most simple form of proportioning equipment. They are used “in-line” in the hose lay or “hard piped” behind the pump panel for dedicated foam discharge. Eductors continually meter small amounts of concentrate into the hose line. Benefits and limitations of eductors are:

- Inexpensive
- Simple in theory
- Subject to rich and lean foam flows dependent on flow pressure (nozzle partially closed)
- Limited hose lay length

Around-the-pump metering systems are connected across the pump and use a siphon injector to move concentrate into the water supply. A metering device in the pick-up tube is used to control the amount of concentrate. A round-the-pump metering system is based on water flow rate, and since they are provided water pressure from the apparatus pump, their performance is unaffected by nozzle selection, changes in length of hose lays, changes in engine pump pressure, and relative elevation of nozzle with respect to proportioner.

Compressed Air Foam Systems (CAFS) and Phos-Chek

These systems are becoming very reliable and more user friendly. The foam concentrate used in these systems determines their effectiveness. Leading OEM CAFS manufacturers recommend Phos-Chek exclusively because of the success they have using our product. They use Phos-Chek in their systems to ensure reliable quality foam production and to prevent potential mechanical problems. While the subject is broad, we have included an overview of the systems and importance of a quality Class A foam such as Phos-Chek.



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Compressed Air Foam Systems (CAFS) and Phos-Chek (continued)

- CAFS starts with a good accurate foam proportioning system. Once the foam solution has been produced in the discharge plumbing, air is introduced from the compressor into the foam solution, making bubbles in the line, adding energy to the hose stream.
- Benefits are smaller bubble production (more surface area = more heat absorption), increased stream reach, and lighter hose lines
- Reliability of the foam concentrate is very important to make these systems function correctly. Water is incompressible. When air is introduced into the discharge water stream with an inferior foam solution, slug flow will result. Slug flow is the state of water-air- water- air in the hose causing intermittent jerking of the hose. This can be very dangerous. When the correct foam solution is in the discharge hose, the solution will flash to small uniform bubbles producing a smooth hose discharge. This is what CAFS was

designed for. Using inferior foam concentrates cause SLUG FLOW. Use Phos-Chek like all of the leading manufacturers to ensure your CAFS system works to its full ability.

Where Can We Purchase Phos-Chek?

Through an efficient dealer network and 24 hour emergency shipment availability from our manufacturing locations along with technical assistance when needed.

Please call 1-800-682-3626 for information about a dealer near you.

More Information on this product and subject can be obtained at www.phos-chek.com. Click on Class A Foam.

Purchasing Assistance

We have provided a specification sheet adopted by many respected departments across the U.S. that will assure you the purchase of a quality foam product. Please feel free to use this specification and adopt it as your minimum qualification for Class A Foam.

For more information, contact any of our worldwide ICL Fire Safety offices.

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