

Los Angeles City Fire Department

TRAINING BULLETIN

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TRAINING BULLETIN NO. 27

AQUEOUS FILM-FORMING FOAM
(Light Water)

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DESCRIPTION

"Light Water" brand AFFF concentrate, FC-200, is for use with flow-proportioning equipment. Light water is a synthetic foam forming liquid designed for use with sea water or fresh water.

It is designed to be mixed in a volume proportion of six percent concentrate to 94 percent water, or approximately one gallon of concentrate to 16 gallons of water.

Light water is a chemical compound containing fluorine, hydrogen and carbon. It is an amber colored liquid that is a surfactant, i.e. having the "unique ability to make water float on flammable fuels which are lighter than water".

When used in eductors or as a pre-mix, it generates a white vapor blanketing foam with remarkable securing action on flammable liquid type fires. It is biodegradable and compatible with protein foam and dry chemical.

LIGHT WATER CAPABILITIES:

1. More than three times as effective than that of protein type foams on open surface gasoline fires.
2. Protects unfired surfaces of gasoline spills from ignition for long periods of time.
3. Extinguishes and protects fuels from reignition at an efficiency level of as much as 40 square feet of burning fuel per gallon of six percent solution.
4. Controls and extinguishes rubber tire fires with no danger of reflash (a problem with dry chemicals).
5. Used on fuel tank fires:
 - a. Subsurface application in storage tanks; and
 - b. Conventional top-side foam application system.
6. Used on water soluble flammable liquids (i.e. alcohols, esters and organic solvents) with fair results. These liquids break down the aqueous film rapidly but with high application rates, extinguishment or control can be achieved.

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INSTRUCTIONS FOR USE OF THE AMERICAN LA FRANCE #600 FOAM NOZZLE WITH LIGHT WATER

HAND LINES:

1. Lay out sufficient 1½ inch hose to reach objective. Attach 1½ inch shut-off butt. Attach American La France #600 foam nozzle to shut-off butt.
2. Supply 100 p.s.i. to the nozzle. This will provide an effective reach of 50 feet with 60 gpm, dispensing five gallons of agent in one minute and ten seconds.
3. Insert pick-up tube in can and start water flowing. Attack from upwind. Apply agent in sweeping motions from low angle.

NOTE: Alternate method - the foam inlet and pick-up tube are provided with a 3/4 inch garden hose thread. The pick-up tube can be extended with a 3/4 inch garden hose up to 50 feet if the couplings are in good condition and do not leak air. This gives the operator flexibility of movement in that he does not have to remain in the immediate vicinity of the foam container.

The eductor should not be more than five feet above the foam supply or a weak mixture will result.

WAGON BATTERY OPERATION:

1. Remove barrel and nozzle tip from battery.
2. Attach 2½ inch to 1½ inch reducer.
3. Attach American La France #600 foam nozzle to battery.
4. Insert pick-up tube in can and start water flowing.
5. Supply 100 p.s.i. to the nozzle. This will provide an effective reach of 65 feet and 75 gpm.

INSTRUCTIONS FOR USE AS A PRE-MIX IN THE TANK OF A PUMP OR TRIPLE

This method should not be used if application can be achieved another way. The detergent action of light water degreases pump packing resulting in pump leakage and possible damage to the pump shaft. This method may be necessary if two lines are needed, or for streams from an aerial ladder.

1. Drain approximately fifty gallons of water from a full 400 gallon tank.
2. Pour 24 gallons of light water into tank.

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3. Refill tank. To agitate: Dump tank, put pump in gear, crack tank fill valve. (This will circulate water through pump and tank assuring a good mixture.)
4. Lay out sufficient 1½ inch hose to reach objective.
5. Attach 1½ inch shut-off butt. Remove spray tip. Attach American La France #600 foam nozzle. Remove pick-up tube. Provide 100 p.s.i. to nozzle.

NOTE: Alternate method - Attach 1½ inch shut-off butt with spray tip set at 30° cone. Provide 75 p.s.i. nozzle pressure.

6. Hold nozzle on low horizontal plane. Apply on fire or spill with a side-to-side, sweeping motion.

MAINTENANCE

1. Flush the pump and hose thoroughly with fresh water after use.
2. Lubricate the pump and discharge gates after flushing.

STORAGE

Light water may be stored in its shipping container without change in its original physical or chemical characteristics. Freezing and thawing has no effect on performance.