



**Kidde**  
A UTC Fire & Security Company

**NF**  
NATIONAL FOAM

**ANGUS FIRE**

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**Kidde Canada**  
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**Angus Fire and National Foam**


Foam Concentrates      Big Flow Systems  
Fire Fighting Equipment      SERVO COMMAND  
Fixed System Proportioning      RED ALERT Service  
Fixed System Discharge Devices      Trailer Mounted Equipment

Kidde Canada is the Canadian industry leader providing expertise and service relating to the protection of people & property from the dangers of fire. Under the umbrella of United Technologies' Fire & Security division, Kidde provides a complete line of solutions to suit your fire needs.

From fire fighting hose, foam and industrial fire suppression systems to residential fire protection products, Kidde Canada manages trusted brand names such as Kidde, Angus Fire, Angus Flexible Pipelines, Pyrene, Chemetron, Badger, Range Guard, Flexline, and Imperial.

1-800-667-0423

ANGUS FIRE   Kidde   CHEMETRON   ANGUS Flexible Pipelines   RANGE GUARD   Pyrene   IMPERIAL   NF




### ELKHART BRASS Educator

**ELK-241**

Elkhart offers an educator for all handlines (1" through 2-1/2") and the educators are compatible with most foam concentrates. All Elkhart's educators:

- Are easy hook-up / easy set-up
- Feature red urethane enamel finish
- Can be deployed in any position
- Offer a removable pick-up screen and removable metering valve
- Come with a clear PVC pick-up hose




### AKRON BRASS In-Line Educator

**AKR-3250**

- Large, easy to read, and removable metering dial with infinite settings between 0% and 6%. Detents at 1/4, 1/2, 1, 3 and 6%
- Rated to 250 gpm (950 lpm) at 200 psi (14 bar) inlet pressure
- Works effectively with nozzles rated from 50 to 100 psi (3 to 7 bar)
- 2 1/2" (65 mm) full-time swivel inlet x 2 1/2" (65 mm) male threaded outlet
- 48" pickup hose standard on 250 gpm (950 lpm)

Also available with 1-1/2" inlet & outlets, 60, 95 or 125 GPM in Brass or Pyrolite



### AKRON BRASS In-Line Educator

**AKR-2328**

90 GPM In-Line Educator with 1 1/2" Inlet and Shutoff Valve

Akron Industrial/Marine Educators are rated to flow at 200 psi (14 bar) inlet pressure and work effectively with nozzles rated from 50 to 100 psi (3 to 7 bar).

- Rated to 90 gpm (340 lpm) at 200 psi (14 bar) inlet pressure
- Works effectively with nozzles rated from 50 to 100 psi (3 to 7 bar)
- 1 1/2" (38 mm) swivel inlet x 1 1/2" (38mm) male
- Factory set at 6% pickup rate, easily changed to 3%
- Includes foam shutoff valve and 60" pickup hose

\*Other styles available

## AKR-3062



### AKRON BRASS Portable By-Pass Eductor

The Akron By-Pass Eductor utilize a built-in by-pass chamber, allowing the operator to change from water to foam without shutting down and feature a large, easy to read, and removable metering dial with infinite settings between 0% and 6%. The Eductors are rated to flow at 200 psi (14 bar) inlet pressure and work effectively with nozzles rated from 50 to 100 psi (3 to 7 bar).

- Built-in by-pass chamber, allows the operator to change from water to foam without shutting down
- Large, easy to read, and removable metering dial with infinite settings between 0% and 6%. Detents at 1/4, 1/2, 1, 3 and 6%

- Rated to 60 gpm (230 lpm) at 200 psi (14 bar) inlet pressure
- Works effectively with nozzles rated from 50 to 100 psi (3 to 7 bar)
- 1 1/2" (38 mm) or 2 1/2" (65 mm) swivel inlet x 1 1/2" (38mm) male
- Brass construction with chrome trim
- 8 quick-change handle positions with a Swing-Out Valve handle
- Optional pipe thread connections available for truck plumbing
- \*Other styles available

## AKR-3500



### AKRON BRASS Ultra-High Expansion Foam Generator

For use with ultra-high expansion foam, Akron Ultra-High Expansion Foam Generator fits a 16" smoke ejector fan for ultra-high foam expansion. The 25 gpm (100 lpm) eductor operates at 80 psi (5.5 bar) inlet pressure.

- Eductor is preset at 2% and works with up to 1000' of hose.

- Includes 10' Polyethlenetube and clamps.
- 1-1/2" (38 mm) female swivel x 1-1/2" (38 mm) male
- 19" (482 mm) square x 12" (305 mm) deep
- Weight: 25 lbs. (11.33 kg)

## POK-QUICKSTIK



### POK POK FOAM with Quick Stik Technology

Nozzles and inline proportioners use small, easy to use solid cartridges of foam or wetting agents. No eductors or pails of foam needed. A foam/wetting agent cartridge inserted into the mixing tube results in dissolving the cartridge into the flowing water producing a foam stream. Simple to use and easy to train. Any brush truck or quick response vehicle currently in-service now can be immediately equipped with a foam/wetting agent system. You can easily have multiple foam/wetting agent lines discharging from the same fire truck. POK FOAM with Quick Stik Technology nozzles will provide a foam/wetting agent system by just attaching the nozzle to the end of a hose line.



**POK**  
**Portable High Expansion Foam Generator**

**POK-7591**

Powered by a unique hydro-hydraulic motor from POK. It will produce an expansion rate between 500 and 1000. Extremely safe for hazmat application as it is powered by water. Equipped with a by-pass valve that enables the control over how wet or dry the foam can be.



**POK**  
**Foam Tube Nozzles**

**POK-13736**

Self-educing, shutoff, metering orifices 0.4%, 1%, 3%, and 6%, comes complete with pick-up tube.



**POK**  
**Medium Expansion Self-Educting Foam Nozzle**

**POK-13238**

Comes with shutoff, metering orifices 0.4%, 1%, 3%, and 6%. Comes complete with pick-up tube. Available in 1.0", 1.5" and 2.5"



**POK**  
**Medium Expansion Foam Tubes**

**POK-13738**

Comes with Gauge and Stainless Steel Screen.



**POK**  
**Medium Expansion Foam Tubes**

**POK-13747**

Comes with Shutoff, Gauge, and Stainless Steel screen.



**POK**  
**Low Expansion, Long Range Foam Tube**

**POK-9297**

Available for all POK Nozzles.



**POK  
Medium Expansion Foam Tube**

Available for all POK Nozzles.

**POK-9713**



**POK  
Monitor Self-Educting Foam Tube**

Comes complete with pick-up tube.

**POK-8969**



**POK  
Low Expansion Foam Tubes**

Without Shutoff.

**POK-9042**



**POK  
Foam Tube Nozzles**

Low Expansion complete with Shutoff.

**POK-9957**



**POK  
Ultra-Light Eductor with By-Pass**

Operate according to the Venturi principle @ 200 PSI. Small dimensional design, light weight and low maintenance, can be used inline or directly to the appliances, comes complete with pick-up tube, fitted with none return valve. Available in many different configurations.

**POK-9950**



**SCOTT PLASTICS  
Four Litre Foam Kit**

Is designed for attachment to a fire hose. Provides a fast and simple solution to a fire scene where a requirement exists to combat fire with Class A or B foam.

**SCP-4075-50**



## SCOTT PLASTICS "Around-the-Pump" Foam Eductor/Mixer

**SCP-4071**

Is a unit used to educt foam concentrate into hose lines. It is mounted between the discharge and suction side of the pump. A simple and effective way for volunteer fire departments to add a foam capability to their equipment.



## SCOTT PLASTICS Foam Maker Nozzle

**SCP-4039MX**

Is designed to fit onto forestry fog nozzles. Produces a 5" stream of medium expanded foam.



## SCOTT PLASTICS Air Aspirating Foam Nozzles

**SCP-FOAM TUBES**

Are manufactured from engineering grade polymer for resilience and durability. Available in 3, 8, 15, 30, 50, 70, 95 GPM.



## SCOTT PLASTICS Fog/Straight Stream Nozzle

**SCP-4037**

Complete with D-handle shutoff has superior design characteristics to work with Class A and Class B foams.



## SCOTT PLASTICS Hip-Pack

**SCP-4001**

Is designed to be worn suspended under a back mounted breathing apparatus used in structural fire-fighting with foam, 2 Gallon capacity.



**SCOTT PLASTICS  
Penetrator Nozzle**

**SCP-4005**

Is specifically designed with a .25 inch discharge orifice when connected to an 1.5" fire hose it generates a high velocity water jet.



**SCOTT PLASTICS  
Back Pack Systems**

**SCP-4030BP50**

Can change every hose line into a foam line. Nine different combinations are available, all include a back pack, foam pick-up hose with foam control quick connector, air aspirating nozzle with matching foam inductor, fixed and swivel connector, and D-handle ball shutoff.



**SCOTT PLASTICS  
Hip Pack Systems**

**SCP-4030HP50**

Are for use when wearing breathing apparatus, can change every hose line into a foam line. Nine different combinations are available, all include a hip pack, foam pick-up hose with foam control quick connector, air aspirating nozzle with matching foam inductor, fixed and swivel connector, and D-handle ball shutoff.



**SCOTT PLASTICS  
Water Thief with Shutoff**

**SCP-4040S0**

## Foam Concentrates

### NOVACOOOL NovaCool UEF Class A, B, D

Here are some of the features :

- Application Ratio: 0.4%
- Fire Class Application: Class A, Class B, Class D, pressurized and 3-D Fires
- Approvals: Manufactured under the NFPA 18, UL tested and listed.
- When applied as a foam through a foaming nozzle or CAFS it can fill voids and stick to vertical surfaces.
- Environmentally responsible formula, rapidly biodegradable.
- Contains no alcohols (will not cause AFFF to de-foam).
- Can be mixed with fresh, brackish, or seawater with good foam in all water types.
- Run off is greatly reduced or eliminated due to the reduced amount of water required to extinguish the fire and the wetting properties that keep the water on and in the fuel.



### KIDDE Niagara

Niagara is a superior quality Alcohol Resistant Film-Forming FluoroProtein (AR-FFFP) fire fighting foam concentrate for use at 1% on hydrocarbons and at 3% on polar solvent liquid fires.

- Easy pouring and easy induction even at -18°C (0°F)
- Film-forming foam with fast knockdown
- Extremely low environmental impact
- Highly versatile and therefore eliminates the need to stock a variety of foam types
- Detergent-free for high resistance to fuel pick-up
- Foam blanket re-seals when disrupted by personnel or equipment

- Reduced stocks, low cost storage, long shelf life and low usage levels combine to provide maximum value for money
- UL Listed for use at 1% and 3% on hydrocarbons and polar solvents

Intended for multi-purpose use as follows:

- 0.1 – 0.5% on Class 'A' fires
- 1% on shallow hydrocarbon spills
- 3% on severe hydrocarbon and polar solvent fires
- 3 – 6% on HazMat vapor suppression

### NIAGARA

## HI-COMBAT A


**KIDDE  
Hi-Combat A**

Environmentally responsible Hi-Combat™ A Class A foam concentrate, is a unique new formulation providing unmatched firefighting performance and flexibility. Hi-Combat™ A is specially designed for use in Class A/B foam systems and is excellent for compressed Air Foam Systems (CAFS). This environmentally responsible formulation does not contain reportable components under SARA Title III, Section 313 of 40 CFR-372, or CERCLA.

Hi-Combat™ A foam concentrate works in two ways. First, Hi-Combat™ A improves the penetrating capability of water. It reduces the surface tension of plain water, which allows it to penetrate surfaces where water

might normally run off, to reach deep-seated fires. This helps reduce the amount of water required to extinguish the fire and also provides quicker knockdown. Secondly, Hi-Combat™ A increases the heat absorbing capabilities of water. Foaming ingredients give water the ability to adhere to vertical surfaces which allows the water longer contact with the fuel. The longer the water is in contact with the fuel, the more heat it is able to absorb. A coating of Class A foam may also be used for exposure protection to prevent fuels from igniting by raising their moisture content and providing a tough protective barrier to an oncoming flame front.

## TRIDOL ATF


**KIDDE  
Tridol ATF**

Tridol ATF 3-3 is a cost-effective Alcohol Resistant Aqueous Film-Forming Foam (AR-AFFF) fire foam concentrate for extinguishing and securing flammable hydrocarbon and polar solvent liquid fires. Tridol ATF 3-3 is a unique combination of hydrocarbon and fluorocarbon surface active agents. It produces a vapour-sealing aqueous film that spreads rapidly over hydrocarbon surfaces to provide rapid control and extinguishment.

On polar solvents an insoluble polymer membrane is formed which protects the foam blanket from the solvent.

- Highly versatile and so eliminates the need to stock a variety of foam types.

- Film-forming on hydrocarbons for fast flame knockdown and extinguishment.
- Burnback resistance and post-fire security.
- Foam blanket re-seals when ruptured by personnel or equipment.

**Environment**

Tridol ATF 3-3 is readily biodegradable, virtually nontoxic to aquatic organisms, and does not contain any glycol ether. Tridol ATF 3-3 can be successfully treated in biological waste water treatment systems



## SPITFIRE



### KIDDE Spitfire

SPITFIRE is a high quality synthetic fire fighting foam concentrate designed to increase the effectiveness of water when mixed at a ratio between 0.1 and 1%. SPITFIRE is effective for use on all CLASS A FIRES.

- Increases wetting ability of water
- Increases the cooling effect of water
- Faster knockdown
- Better smoke reduction
- Reduces the possibility of rekindle
- Increases adherence to vertical surfaces for exposure protection

- Can be used through all types of standard proportioning and application equipment
- Can be premixed in water tanks for easy proportioning
- Economical

SPITFIRE is biodegradable and relatively low in toxicity to aquatic organisms. It contains no alkyl phenol ethoxylates (APEs) or complexing agents.

## TRIDEX



### KIDDE Tridex

Tridex 3-3 AR-AFFF is a cost-effective Alcohol-Resistant Aqueous Film-Forming Foam (AR-AFFF) concentrate for extinguishing and securing flammable hydrocarbon and polar solvent liquid fires. Tridex 3-3 AR-AFFF is a unique combination of hydrocarbon and fluorocarbon surface active agents. It produces a vapor-sealing aqueous film that spreads rapidly over hydrocarbon surfaces to provide rapid control and extinguishment.

On polar solvents an insoluble polymer membrane is formed which protects the foam blanket from the solvent.

- Highly versatile, eliminates the need to stock a variety of foam types.
- Film-forming on hydrocarbons for fast flame knockdown and extinguishment.
- Burnback resistance and post-fire security.
- Foam blanket reseals when ruptured by personnel or equipment.

#### Environment

Tridex 3-3 AR-AFFF can be successfully treated in biological waste water treatment systems.

## PETROSEAL

### KIDDE Petroseal



Petroseal 3% is a superior quality Film-Forming FluoroProtein (FFFP) fire fighting foam concentrate for extinguishing and securing flammable hydrocarbon liquid fires.

Its unique formulation is based on advanced protein foam technology. The protein base material provides a tough cohesive foam blanket with high resistance to heat that provides the same post-fire security as a top quality FluoroProtein (FP). Fluorochemical surface active agents combined with the protein base produce a vaporsealing aqueous film that provides the same fast control and extinguishment as a top quality synthetic AFFF.

- Film-forming for fast flame knockdown and extinguishment.
- Stable and long-lasting foam blanket for excellent burnback resistance and post-fire security.

- Detergent-free for high resistance to fuel pick-up.
- Foam blanket re-seals when ruptured by personnel or equipment.
- Reduced stocks, low cost storage, long shelf-life, and low usage levels combine to provide maximum cost effectiveness.

#### Environment

Petroseal 3% is readily biodegradable and virtually nontoxic to aquatic organisms. It is based on a natural protein foaming agent and contains no harmful synthetic detergent or glycol ether. Petroseal 3% can be successfully treated in biological waste water treatment systems.

## TRIDOL AFFF

### KIDDE Tridol AFFF



Tridol 'MA' grade of Aqueous Film Forming Foam (AFFF) provides a comprehensive solution to all military or aircraft installation fire risk situations where fast fire attack is essential to save life or prevent a major escalation of the fire. Tridol 'MA' is specially formulated from "oil shedding" fluorocarbon surfactants which have excellent foaming properties and which produce a vapor-suppressing aqueous film on

flammable hydrocarbon liquids. The use of these chemicals ensures that fire knockdown performance is maximized, with rapid foam cover and extinction.

#### Environmental

Tridol 'MA' was found to be the least toxic of all products evaluated in a recent independent study done by Environment Canada on a variety of AFFF foams. Contact the manufacturer for details.

## FP70 PLUS



### KIDDE FP70 Plus

FP70 Plus is a superior quality FluoroProtein (FP) fire fighting foam concentrate for extinguishing and securing flammable hydrocarbon liquid fires. In particular it is a powerful and cost-effective agent for the protection of regular leaded gasoline, unleaded gasoline containing up to 20% Methyl Tertiary Butyl Ether (MTBE), and pure MTBE.

Its unique formulation is based on advanced protein foam technology. The protein base provides a tough cohesive foam blanket with high resistance to heat that quickly smothers, cools, and seals the risk. Fluorochemical surface active agents combined with the protein base increase the fluidity and fuel repellency of the foam.

- Stable long-lasting foam blanket for

unsurpassed burn back resistance and post-fire security.

- Highly fluid foam for rapid fire knockdown and extinguishment.
- Detergent-free for high resistance to fuel pick-up.
- Excellent sealing action on hot metal surfaces.
- Foam blanket re-seals when ruptured by personnel or equipment.

#### Environment

FP70 Plus is biodegradable and virtually non-toxic to aquatic organisms. It is based on a natural protein foaming agent and contains no harmful synthetic detergent or glycol ether. FP70 Plus can be successfully treated in biological waste water treatment systems.

## ALCOSEAL



### KIDDE Alco Seal

Angus Alco Seal is an all-purpose Alcohol Resistant Film Forming Fluoroprotein Foam, highly effective against a wide range of hydrocarbons and polar solvents. Alco Seal 3-6% is used at 3% for hydrocarbons and 6% for watersoluble (polar solvent) fuels. Alco Seal 3-3% is used at 3% on both hydrocarbon and water-soluble fuels. Alco Seal gives rapid control and post

extinction security. Its excellent resistance to water soluble solvents is due to the formation of a cohesive polymeric membrane formed on the fuel surface which protects the foam from polar fuels. It also has exceptional knockdown properties on hydrocarbon fuels even when applied forcefully.

## HI-EX



### KIDDE Hi-Ex

Angus Hi-Ex is a blend of high activity, synthetic foaming agents and foam stabilizers, specially formulated to produce high quality stable foam. Hi-Ex is effective on a wide variety of Class A and Class B fire risks. The finished foam has drainage characteristics far superior to those of standard detergents; this increases its ability to carry water to the fire and acts as a positive aid to effective fire suppression.

#### Features

- Produces extremely stable long lasting foam
- Can be used with fresh or sea water
- Suitable for all medium and high expansion equipment
- Economical to use
- Three Way Fire Attack
- Hi-Ex combats fires in three ways:

1. Initial contact with fire generates a large volume of steam displacing the super heated gases and products of combustion.
2. At the same time, the water content of the foam when converted to steam, produces a valuable cooling effect.
3. Finally, the large volume of foam generated engulfs the area and totally seals off and extinguishes any remaining fire.

## TRAINOL



### KIDDE Trainol

Angus Trainol is a specially formulated mixture of synthetic materials which produces a high quality foaming agent for use with Liquefied Petroleum Gas fire training simulators. LPG training simulators are becoming increasingly popular as fire professionals struggle to balance regulations governing air pollution and other environmental considerations, with the need to ensure personnel achieve an acceptable level of preparedness to enable them to respond effectively in the event of a real fire incident. Angus

Trainol meets these exacting requirements. Designed for proportioning at between 1% and 3% depending on the foam generating equipment used. This low proportioning rate guarantees the most costeffective solution for effective Class B fire training programs. Also, when equipment permits, reduction in the proportioning rate below 3%, a corresponding directlyrelational improvement in environmental impact is achieved.

## AF120



### KIDDE AF120

The innovatively designed Angus HI-COMBAT AF120 MK2 is a fully self-contained mobile foam unit which has been specifically developed for the rapid deployment of foam extinguishing agent to fires and chemical spills. Further refinement has been achieved through a detailed ergonomic review and lower centre of gravity design, resulting in improved handling and mobility.

Requiring only connection to a suitable water supply, the standard unit comprises a 120 litre foam concentrate tank, HI-COMBAT UNI-225 inductor and F225/HU low expansion foam branchpipe. Also two 15m lengths of dutch coiled 45mm diameter Duraline fire hose, fitted with light alloy 2-1/2" instantaneous couplings to BS336 (other connections available to special order). A shut off ball valve is also fitted to the inductor as standard, to facilitate swift operation by just one person.

This improved performance combined with an effective fire fighting capability makes the Angus HI-COMBAT AF120 Mk2 ideal for the protection of smaller flammable liquid hazards such as boiler rooms, oil storage and loading terminals, paint or spirit stores, airfields, industrial sites, generator rooms and similar high risk areas. The HI-COMBAT AF120 Mk2 provides a compact and highly efficient fire fighting unit, on hand for a fast response with minimum manpower requirements.

This highly versatile unit is suitable for use with any type of foam concentrate, but is particularly effective when used with Angus Alcoseal and Petroseal Film Forming FluoroProtein foams. When used with Alcoseal 3-3 it effectively becomes an AF240, doubling the operating time on Polar Solvent fires.

The ability to use Angus HICOMBAT MEX225U and MEX450U medium expansion foam branchpipes with this unit, makes it particularly suitable for rapid intervention in cases where vapour suppression of chemical spills is a necessity.

All component parts and materials have been chosen to minimize maintenance requirements. The foam tank is constructed from high strength, chemical-resistant GRP resin and is mounted on a corrosion resistant, thermoplastic coated steel chassis. A footbrake is also provided for maximum stability on a slope.

# Foam Terminology

<b>Classifications:</b>	Class A - Wood, Plastics and Rubber. Class B - Flammable Liquids and Gases. Class C - Energized Electrical Equipment. Class D - Combustible Metal.
<b>Foam:</b>	A stable mass of small air-filled bubbles showing tenacious ability to spread across horizontal surfaces of flammable liquids.
<b>Foam Concentrate:</b>	A concentrated liquid when mixed with water and air will form a foam blanket.
<b>Foam Solution:</b>	A homogeneous mixture of foam concentrate and water.
	<p>0.4 % - 0.4 Gallon of foam concentration + 99.6 Gallons of water = 100 Gallons of 0.4 % of foam solution.          1.0 % - 1 Gallon of foam concentration + 99.0 Gallons of water = 100 Gallons of 1.0 % of foam solution.          3.0 % - 3 Gallons of foam concentration + 97.0 Gallons of water = 100 Gallons of 3.0 % of foam solution.          6.0 % - 6 Gallons of foam concentration + 94.0 Gallons of water = 100 Gallons of 6.0 % of foam solution.</p>
<b>Foam Concentration:</b>	The amount of foam concentrate contained in a given amount of foam solution.
<b>Foam Maker/Mixer:</b>	A device designed to introduce air into a pressurized foam/water solution stream.
<b>Expansion Ratio:</b>	The ratio of volume of foam by volume of foam solution used to generate the foam.
	<p><b>Low Expansion:</b>                      Between        0:1 to 20:1  <b>Medium Expansion:</b>                Between        20:1 to 200:1  <b>High Expansion:</b>                    Between        200:1 to 1000:1</p>
<b>Aspirating:</b>	A nozzle that physically draws air into the nozzle body through air inlet holes by a modified venturi process.
<b>Self-Educting Nozzle:</b>	A nozzle containing a high efficiency eductor in the body that draws foam concentrate into the water stream.
<b>Venturi:</b>	A constricted portion of a pipe that increases water velocity and creates a vacuum to draw the foam concentrate into the water stream.
<b>Residual Pressure:</b>	The pressure existing in a line at a specific flow.
<b>Static Pressure:</b>	The pressure existing in a line without any flow.
<b>Pick-Up tube:</b>	A clear tube that will be used to draw the foam concentrate from the container.
<b>Eductor:</b>	A proportioning or mixing device which uses the Venturi principal to draw the foam concentrate at a specific percentage from an atmospheric foam concentrate storage vessel.
<b>In-Line Eductor:</b>	An eductor that will be mounted at the side of the pump, between hoses or directly at the inlet of the nozzle.
<b>By-pass Eductor:</b>	An eductor that will be mounted at the side of the pump, between hoses or directly at the inlet of the nozzle that will allow water to flow through a by-pass device without drawing any foam concentrate from the pick-up tube.
<b>Proportioner:</b>	A device, such as an eductor, that draws foam concentrate at the proper ratio into the fire/water stream.
<b>Friction Loss:</b>	The amount of energy lost by water traveling through the hose. The amount is measured by the pressure difference between pump pressure and nozzle pressure.

# FOAM

## Foam Eductor Layout

Eductors are pre-engineered systems that are tested at a specific inlet pressure for operation, 200 PSI is the testing pressure. The reason that the inlet pressure is higher than at normal testing pressure of 100 PSI, is typically the loss in creating the vacuum necessary to pull the agent concentrate into the metering valve. The pressure at the outlet of the eductor is called the back-pressure. The actual back-pressure at the eductor is the combination of the friction loss in the hose, the nozzle pressure and perhaps the elevation loss.

**NOTE: The nozzle can be of equal or higher GPM.**

### BEFORE YOU EXECUTE YOUR LAYOUT WITH YOUR FOAM EDUCTOR:

1. Ensure that your inlet and outlet coupling at the eductor are of the same thread.
2. Ensure that the eductor is free of any debris in the waterway.
3. Ensure that the check valve at the inlet of the pick-up tube is free. If it is stuck to the wall, it may require that you rinse it with fresh water.
4. Ensure that your nozzle or your specific foam nozzle is of the same GPM as your eductor.

#### How to Calculate Static Head Pressure

elevation = PSI back-pressure  
2.31

For example: a nozzle is 30 feet above the eductor, the resulting back-pressure increase is 13 PSI.

30 ft elevation = 13 PSI back-pressure  
2.31

#### ! REMEMBER !

Refer to NFPA 11 Guidelines for Application Rates

#### Maximum Hose Length on Eductor Outlet

Eductor GPM	Hose Size	Max. Length
60 GPM	1.5"	300 Ft
80 GPM	1.75"	450 Ft
95 GPM	1.5"	200 Ft
95 GPM	1.75"	400 Ft
125 GPM	2.5"	400 Ft
250 GPM	2.5"	200 Ft

Note: Results may vary depending on eductor style, nozzle style, hose Mfg and and back-pressure or head pressure.

5. Ensure that the arrow on the eductor is pointed in the right direction of the flow prior to attaching your hoses.
6. Ensure that the gasket between the pick-up tube and the eductor is properly in place and secure. If there is any suction of air, the agent concentration will be unbalanced.
7. Ensure that the diameter of the hose between the eductor and the nozzle are of the same diameter or greater. It is extremely important to run a test if you require greater distance. The actual back-pressure at the eductor is the combination of the friction loss in the hose, the nozzle pressure and perhaps the elevation. This will vary greatly based on the manufacturer of the hose and/or the nozzle and the elevation.
8. Couple your hose layout from your water supply to the eductor.
9. Couple your hose to your nozzle.
10. Set the desired concentration % at the eductor. Consult the specification of the manufacturer of the agent.
11. Open the water supply and verify that you have the proper pressure and the reach that you want to achieve.
12. Ensure that the pick-up tube is aspiring properly by momentarily placing it in the agent container.
13. Place the pick-up tube in the agent concentrate container when you are ready to produce foam concentrate.

### AFTER YOU EXECUTE YOUR LAYOUT WITH YOUR FOAM EDUCTOR:

1. Be sure that you follow the agent manufacturer recommendations for cleaning up.
2. Ensure that you rinse the nozzle, your hose, your foam eductor, check valve and the pick-up tube thoroughly with fresh water prior to storage.

**Ensure that you follow any other storage procedures and recommendations from the agent manufacturer.**

#### Common Causes of Improper Proportioning:

Not enough water flowing through the eductor or pressure.  
Nozzle elevation too high, too much back-pressure  
Back-pressure = Hose friction loss + Nozzle elevated too high above foam eductor.  
Mismatched nozzle GPM vs Eductor GPM.  
Clogged metering device, check valve or pick-up tube.

Inlet Pressure - Eductor Pressure Loss = Outlet Pressure  
200 PSI - 40 PSI = 160 PSI