

# A DIRECT ATTACK SOLUTION



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## BLAZETAMER380™ AERIAL FIRE SUPPRESSANT

Advancements in technology have provided additives to enhance the effectiveness of water for fire suppression.

In addition to foam and long term retardants, water enhancers including gels, BLAZETAMER380™ represent the future for direct attack while fighting wildland fires.

When BLAZETAMER380™ is injected into water it binds water molecules together much the same as links in the chain, without changing its weight. It is not designed to adhere to vertical fuels, but rather after making contact, it coats the surface as it works its way through the canopy to reach ground fuels.

BLAZETAMER380™ is a non-coloured liquid concentrate water enhancer, that is non-toxic, non-corrosive and environmentally safe. It is proven harmless to humans, animals and vegetation, complies with Work Health Safety Regulations for firefighters, and is approved for use by state and federal agencies. It is listed on the United States Forest Service Qualified Products List (QPL). BLAZETAMER380™ may be applied as a short term retardant in a Long Term Retardant Exclusion Zone if a land management agency chooses to do so. BLAZETAMER380™ is accredited for use by the Australian Fire and Emergency Service Council (AFAC). It has been approved for use in the EU.

BLAZETAMER380™ is an effective and valuable fire suppressant for direct attack of fires during initial or extended attack operations. It can be used in engines, slingable bags, drop tanks, and can be ground-loaded, mixed in dip tanks for helicopters with buckets or used with on-board injection systems in helicopters, SEATs, water-scooping and land-based, multi-engine airtankers.

A combination of several factors allows BLAZETAMER380™ to out-perform other products by:

- Drop Characteristics
- Less Evaporative Loss
- Canopy Penetration
- Full Use of Tank Capacities
- Endothermic Properties
- Coverage Levels
- Mix Ratios

The result is an increase in line-building production per load with BLAZETAMER380™



**Drop Characteristics:** When BLAZETAMER380™ is aerially delivered the effect of the linear chains of water causes drop characteristics that differ from water, retardant, foam or gels, since drop patterns are denser, less wide and have less drift, as proven in tests conducted in 2017, in the United States and a thermal imagery study in Canada .

**Less Evaporative Loss:** Evaporative loss occurs when a suppressant enters the airstream after leaving the aircraft and again as it moves through the thermal zone above a fire. The amount of loss varies with each suppressant, i.e., up to 35% of water and foam never reaches the intended target. The properties of BLAZETAMER380™ allow a significant increase of product reaching the intended target due to reduced evaporative loss and less drift.

**Canopy Penetration:** BLAZETAMER380™ penetrates a canopy better than retardant or gels. After a drop, long “strings” of water can be seen hanging from vegetation. These strings absorb thermal energy as they enter the thermal zone above a fire and their viscosity decreases after making initial contact with a canopy. Its ability to penetrate vegetation is similar to foam mixed at low concentrations. If fuels are torching or crowning, a mix ratio of 0.65% may reach and remain effective on ground fuels.

**Endothermic Properties:** BLAZETAMER380™ has unique fire suppression characteristics that, when applied to fire, rapidly reduces temperature to below the flash point of the fuels. This is most noticeable after it is applied since the reduction in heat causes less combustion and is visible through the reduction in smoke. Although not approved by NFPA for Class B Fires, in field tests BLAZETAMER380™ has extinguished liquid fuel fires, such as cooking oil, gas and diesel due to its endothermic properties.

**Coverage Levels:** Fire suppression aircraft have doors located on the belly of the aircraft, that have been standardised to aid in efficient and effective use of retardant and to promote effective communication between air attack officers and pilots. The amount of suppressant or retardant that is released is expressed with the term “Coverage Level”.

Coverage Level is defined as the amount of suppressant that is dropped on an area that is 10' x 10' (100 square feet). Pilots fighting fire in a grassy fuel type would likely use Coverage Level 2, (8 litres/100 sq'), while a type that has a canopy of trees would likely receive Coverage Level 6 or 8. Production tables are available to estimate the amount of line that is treated with various tank sizes and coverage levels, assuming standard drop heights and airspeed.

***The following example is used for illustration purposes:***

While a Coverage Level 4 may be appropriate for fires in a brush fuel type, a load of BLAZETAMER380™ at Coverage Level 2 may have the same effect on fires. This advantage could increase line production by up to 2½ times.

**Mix Ratios:** For some agencies, adjustments can also be made in the mix ratio. Standard mix ratios of 0.1%-0.2% in engines, 0.2%-0.32% in helicopters and 0.32%-0.4% in SEATs may be increased to meet specific fuel type and suppression needs. A mix ratio of up to 0.65% may be used in any fire suppression aircraft for fires that are torching or crowning.



## GROUND OR AERIAL RESOURCES

For most agencies up to 90+% of wildland fires are fought with ground resources. This number varies by agency and by season, due to weather and fire conditions. Aerial resources are used for tactical operations on the remaining 10% of fires, due to values threatened, access, fire intensity or firefighter safety.

## DIRECT OR INDIRECT STRATEGIES

Up to 90+% of the time the preferred and safest strategy when aircraft are used for initial attack is direct attack. Most times an anchor is established so firefighters have a safe zone in the adjacent blackline as they work on the flanks and eventually turn the corner on the headfire. Sometimes aircraft take action directly on the head or a "hot flank" to save property or to keep the fire from reaching priority areas. When direct attack is not an option due to fuels, access, terrain, firefighter safety or resources, indirect attack using retardant may be the best option.

## COLOUR VS. NON-COLOUR

The primary purpose of adding a colourant to aerial fire suppressants or retardant is to allow aerial firefighters, Air Attack Officers and pilots, to locate previous drops so they can remain oriented, tag on or roll up to them while building an indirect or parallel line. **When using BLAZETAMER380™ for direct attack colourants are not necessary since, unless other priorities dictate, drops are made sequentially on a fire.** After an anchor is established the subsequent drops begin where the heat and smoke begins. This is normally evident from an aerial view and can be enhanced using infrared cameras in suppression aircraft.

Colourant adds cost to the per litre price of the suppressant. Some agencies are successfully adding a blue colourant to BLAZETAMER380™.

One SEAT pilot was adamant that colourant be used but, after returning from his first fire stated that,

*"We don't need colourant, where my previous drop was it is black and shiny and my next drop goes where the smoke starts".*



SEAT with coloured retardant.



FireBoss with BLAZETAMER380™ without colour.



# BLAZETAMER 380

Aerial Fire Suppressant

## EQUIPMENT OPTIONS FOR USING BLAZETAMER380™

### LOADING AIRCRAFT:

SEATS – BLAZETAMER380™ concentrate can be:

Injected into the supply line via a FF-PIU or FF-7, available from your distributor, as SEATs are loaded on the ramp at a SEAT Base.

Injected into the aircraft tank with one of the following options, then loaded with water from a SEAT Base or other airport/airstrip that has a water source (fire department or hydrant). The action within the tank as it is filled with water provides adequate agitation for mixing.

- An approved on-board injection system that has a 182 litre reservoir.
- From concentrate in the 68-litre “foam” hopper, that will provide enough concentrate for 3-7 loads, depending on mix ratio.
- Loaded directly into the aircraft tank at a rate of 8-19 litres per load, depending on tank size and desired mix ratio.

**FireBoss** - BLAZETAMER380™ concentrate can be injected with an approved on-board injection system that has a 182 litre capacity and can provide enough concentrate for 16-20+ loads, depending on the mix ratio and payload.

**Multi-Engine Airtankers** - BLAZETAMER380™ concentrate can be injected into supply lines at a Tanker Base with the use of an FF-35.

**CL-215 / CL-415** – Work continues to obtain approval for use of BLAZETAMER380™ in the CL-215 / CL-415 fleet. Test drops in Canada have proven that BLAZETAMER380™ will be a viable alternative to foam in these aircraft.



FF-PIU (Portable Injection Unit)



FireBoss dropping BLAZETAMER380™



CL-415 dropping BLAZETAMER380™ in Ontario.



FF-35 loading a CV-580 in Alaska.



**HELICOPTERS – Fixed Tank On-Board Injection Systems** – BLAZETAMER380™ is approved for use in both Simplex and Isolair systems. Concentrate reservoirs are sized to provide a fuel cycle of 20 loads at a mix rate of 0.2% - 0.32%. BLAZETAMER380™ was used in both Type I and Type II helicopters on fires in the Northern Rockies in the summer of 2017 with great results.

BLAZETAMER380™ turns a Type II Helicopter into a Type I Helicopter:

Medium Helicopters	+	BLAZETAMER380	=	Heavy Helicopters
320 gallons water \$1,800/hour				660 gallons of water \$4,000/hour

**HELICOPTERS – On-Board Injection Systems for Buckets** - BLAZETAMER380™ is approved for use in the SEI Sacksafoam system for Bambi Buckets. Testing is underway to determine the best way to provide adequate agitation after the bucket is filled with water and before it is delivered to the fire.

**HELICOPTERS – Dip Tank Operations** - BLAZETAMER380™ can be pre-mixed and available in dip tanks for helicopters that are configured with either a fixed tank or buckets. Flight time can be reduced since the dip tank, pump, hose and fittings, BLAZETAMER380™ concentrate and an operator can be flown into a roadless area that has available water and an open meadow rather than requiring an area near a road.



Chinook with on-board injection with BLAZETAMER380™



Chinook dipping BLAZETAMER380™

**ENGINES / BRUSH RIGS** – Special equipment is not needed for using BLAZETAMER380™ in a fire suppression rig, engine or all-terrain unit. Simply pour the desired amount of BLAZETAMER380™ into the tank, add water and recirculate through the pump for a few minutes. If agency policy allows, a mix ratio of 0.1% - 0.2% is effective when applying BLAZETAMER380™ from ground equipment. 1 litre containers can be filled from 20-litre containers so they can be distributed and stored throughout your fleet.



## TRANSFERRING BLAZETAMER380™ CONCENTRATE TO AIRCRAFT

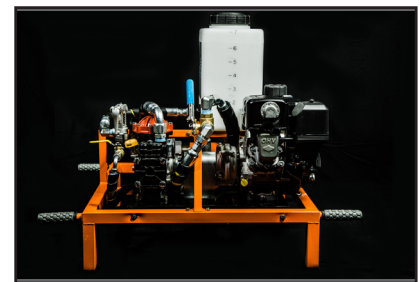
**Mobile SEAT Base** – A FastFiller Portable Injection Unit (FF-PIU) is used to inject product into aircraft supply lines. It is very mobile and can be transferred throughout the state or region in a pickup or small aircraft, along with a few 20 litre containers of BLAZETAMER380™ and one operator, to set up a portable or remote SEAT Base. This unit can also be used to transfer BLAZETAMER380™ into helicopters or SEAT hoppers.



FastFiller - Portable Injection Unit - (FF-PIU)



FastFiller - 35 (FF-35)



FastFiller - 7 - (FF-7)

**Primary SEAT or Tanker Base** – Two different FastFiller models are available. They both have a high-pressure/low-volume pump powered by a gasoline engine. These units pump BLAZETAMER380™ concentrate directly into the supply line as a SEATs and/or airtankers are loaded with water.

**FastFiller-7 (FF-7)** - Can be located at your primary SEAT Base, along with one or more shuttles (1,000 litres each) or several 20 litre containers of BLAZETAMER380™. The FF-7 has a 26 litre concentrate tank and is very portable with handles for two persons to set it up, similar to a portable water pump. Concentrate can be loaded into the hopper via suction or by simply pouring it into the top of the hopper.

**FastFiller-35 (FF-35)** - Can be located at a primary SEAT or Tanker Base along with shuttles (1,000 litres each) of BLAZETAMER380™. The FF-35 has a 132 litre hopper and has wheels and a handle for moving it on the ramp. These units inject into aircraft supply lines as the aircraft is filled from a hydrant or pump/tank water source.

**Aircraft with On-Board Injection Systems - SEATs, FireBoss or Helicopters** – Two equipment models are available to easily transfer BLAZETAMER380™ from a tote to the aircraft while it is on the ramp or at a helibase, or BLAZETAMER380™ concentrate can simply be poured into reservoirs.

**FastCart-52 (FC-52)** - has a 197 litre tank and is designed to load BLAZETAMER380™ concentrate into FireBoss' with on-board injection systems. This unit is on wheels and has a handle for moving it on the ramp.

**FastCart-200 (FC-200)** - has a 757 litre tank and is designed to load BLAZETAMER380™ concentrate into Type I Helicopters with on-board injection systems. This unit is a self-contained trailer with a low-pressure/low-volume pumping system that is capable of pumping 530 litres of concentrate in 8 minutes. This unit comes with a ball-hitch so it can be moved with an ATV or with the two-wheeled motorised trailer dolly.





## BLAZETAMER380™ VS. RETARDANT

Retardant is most effective when using indirect methods of firefighting. Chemical concentrates are mixed with water at a rate of 85% water and 15% chemical agents. After the water evaporates the residual chemicals alter fuels, making them fire resistant since they will not support combustion, retarding a fire's spread. Retardant is inefficient as a direct attack tool since 15% of the volume does not improve suppressant capabilities when applied directly to fires. Retardant weighs about 9.1 pounds per gallon when mixed, effectively decreasing the volume that can be aerially delivered per load.

Until now, when firefighters needed more than water on their fires for direct attack, their primary option was retardant. Retardant is inefficient when used for direct attack.

The following scenario focuses on aircraft load capacity when comparing use of retardant and BLAZETAMER380™ as a direct attack tool. It does not consider the evaporative loss, wind shear nor endothermic benefits of BLAZETAMER380™. If the payload of a SEAT is 800 gallons of BLAZETAMER380™, or 6,640 pounds, it may only be able to carry 730 gallons of retardant. This 10% reduction of volume is offset when using retardant as a tool for indirect attack, but is not an efficient use of aircraft when direct attack strategies are employed.

Retardant increases the weight of water from 8.3 lbs./gal. to about 9.1 lbs./gal. and only 85% of retardant (water) is effective when used for direct attack, 15% is the desired chemicals and colouring agent used for indirect attack:

### Given the same density altitude and fuel load for direct attack missions:

SEAT with 800-Gallon Tank	Gallons of Product	Effective gallons of product	Helicopter / Airtanker with 2,000-Gallon Tank	Gallons of Product	Effective gallons of product
BT380	800	800	BT380	2000	2000
Retardant	730	620	Retardant	1825	1,550

### Summary - You get 25% more suppressant per drop with BLAZETAMER380™

Given the same density altitude and fuel load for direct attack missions a Type I helicopter with an on-board injection system can pick water from a nearby water source rather than returning to a base or portable retardant plant:

					COSTS			
CH-47D	Loads per fuel cycle	Minutes per turn	Average gallons per load	Total effective gallons	Product total & cost per mixed gallon	2 hours of flight time	Total delivered product cost	Per effective mixed gallon delivered
BT380	20	6	2,000	<b>40,000</b>	\$13,952 \$0.35/gal	\$14,800	<b>\$28,752</b>	\$0.72
Retardant	9	13	1,825	<b>13,950</b>	\$41,063 \$2.50/gal	\$14,800	<b>\$55,863</b>	\$4.00



## BLAZETAMER380™ VS. FOAM

Class A Foam is a surfactant used to reduce film thickness and penetrate fuels by reducing the surface tension of water. If applied at high concentrations it can create a foam blanket that surrounds fuels, creating a barrier between the fuel and the fire. It is used in a decreasing amount in aerial operations due to concerns of corrosiveness and since other, more desirable products are now available.

### Comparison with Foam and BLAZETAMER380™ in a FireBoss with 750-gallon load

Suppressant	Cost/Gallon	Gals/Load	Cost/Load	Evaporative Loss	Effective Gallons	BT380 Fire Properties*
Foam	\$20	1.5 (.2%)	\$30.00	-35%	488	
BT380 .31%	\$109	2.4 (.32%)	\$261.60	-15%	638	<b>x 2 = 1,276</b>

\*Drop Characteristics, Canopy Penetration, Endothermic Properties, Coverage Levels

### Example - Fire requiring 20,000 gallons of Suppressant @ 0.1 flight hours/load (\$4,500/hour)

Suppressant	Number of Loads	Total Flight Time	Flight Cost	Suppressant Cost	Total Cost
Foam	41	<b>4.1</b>	\$18,450	\$1,230	<b>\$19,680</b>
BT380 .31%	16	<b>1.6</b>	\$7,200	\$4,186	<b>\$11,386</b>

Result - Save over \$8,000 per fire by reducing flight time by more than half.

### BLAZETAMER380™ doubles the production of a FireBoss

FireBoss	+	BLAZETAMER380	=	CL-415
800 gallons/load \$4,500/hour				1,600 gallons of water \$7,000/hour (US Contract Rate)

### Comparison with Foam and BLAZETAMER380™ in a CL-415 with 1,600-gallons

Suppressant	Cost/Gallon	Gals/Load	Cost/Load	Evaporative Loss	Effective Gallons	BT380 Fire Properties*
Foam	\$20	3.2 (.2%)	\$64.00	-35%	1,040	
BT380 .31%	\$109	5.0 (.31%)	\$545.00	-15%	1,360	<b>x 2 = 2,720</b>

### Fire that requires 20,000 gallons of Suppressant @ 0.1 flight hours/load (\$3,700/hour)

Suppressant	Number of Loads	Total Flight Time	Flight Cost	Suppressant Cost	Total Cost
Foam	20	2.0	\$7,400	\$1,280	\$8,680
BT380 .31%	8	0.8	\$2,960	\$4,360	<b>\$7,320</b>

Result – Save over \$1,000 per fire & reduce flight time by more than half!



## BLAZETAMER380 VS. GELS

Gels do not bind water molecules together. They may be liquid concentrates or powders that, when added to water, absorb water molecules to increase molecule size to increase film thickness and slow water evaporation. Not all water molecules in a load are absorbed, thus some are available to penetrate a canopy but are also prone to evaporative loss. An uncontrollable variable is water quality, both salinity and pH. Water quality dramatically impacts the ability of the super absorbent gel cells to absorb water so the only solution is to add more product. More Gel equates to more weight and cost to the customer.

Gels contain a crystalline product called Polyacrylic Polymers. This same product is found in diapers. Gels absorb heat energy and create a thermal protective coating on fuels and are especially effective on vertical fuels since they adhere to them. Some tests show that loads of these larger molecules are less dense and are more prone to drift.

BLAZETAMER380™ links all water molecules in a load together, is less prone to drift and it is not affected by water quality or salinity so mix ratios remain constant, whatever the water source.

Airtankers can effectively alternate loads of retardant and BLAZETAMER380™ without requiring the tank to be rinsed since the salt contained in any residual retardant does not affect the performance of BLAZETAMER380™.

### VALUE

The value of using BLAZETAMER380™ cannot be computed by simply factoring the product cost since additional factors include:

**Amount of Suppressant that does not reach the ground due to evaporative loss**

- Up to 35% of water treated with foam does not reach the ground or intended target.

**Drop Characteristics; length, width & density, less drift**

- Line production per drop is increased significantly with BLAZETAMER380™ due to dense, narrow pattern vs. water or gel.

**Endothermic Properties that affect fire suppression**

- Does not require multiple drops in same area.

**Cost Savings through Improved Line Production at coverage level 4**

- Flight rates range from \$2,500-\$9,000 per hour

- Aircraft with on-board injection systems are not required to ferry to tanker base or roadside helibase so costs per gallon delivered are reduced dramatically while production is increased.

**Better support for ground firefighters**

- Less time spent ferrying to/from a tanker base or roadside helibase allows more time per fuel cycle for delivering BLAZETAMER380™ to ground firefighters.

BLAZETAMER380™ is less expensive per mixed litre than any other water enhancer listed on the USFS QPL. Reduction of fire suppression costs is a goal of all land management agencies, use of BLAZETAMER380™ will help contain costs.

• FACTORS FROM REDUCTION OF FLIGHT TIME include:

- Less pilot fatigue

- Less wear and tear on the aircrafts mechanical components

- Decreases risk to pilots working in a low level, smoky environment that often includes multiple aircraft in a congested airspace.



## SAFETY

*Firefighters must always wear proper PPE and use care when working on fires, especially on portions of the line where fire suppressants or retardant has been applied to avoid slips, trips and falls.*

### **Wildland Firefighting is Hazardous.**

The wildland fire environment exposes firefighters to many hazards, such as; extreme heat, flames, snags, unsure footing, uneven ground and other factors within the wildland urban interface, to include; powerlines, smoke across roads, vehicle traffic and fuel sources such as propane. The goal for fire managers is to identify hazards and mitigate them as best they can to provide the safest environment for firefighters, both on the ground and in the air.

### **SAFETY FACTORS**

- LINE PRODUCTION per drop is increased significantly with BLAZETAMER380™
- FEWER ACRES BURNED = LESS EXPOSURE to firefighters from environmental hazards.
- REDUCED FLIGHT TIME = pilots have less exposure in a smoky, low-level and sometimes congested airspace.
- LESS STRESS on the aircraft sub-frame due to the reduction in load requirements

**Improved Aviation Safety** - a reduction in flight time decreases risk to pilots working in a low level, smoky environment that often includes multiple aircraft in a congested airspace.

### **Advantages of using BLAZETAMER380™ include:**

- Quicker extinguishment of fires that results in less acres burned
- Fewer chains or kilometres of fireline that need to be constructed or controlled
- Decreased threat to lives, property and resources
- Fewer hours of flight time required with suppression aircraft that keeps pilots safer

**HAZARDS x EXPOSURE = PROBABILITY**

**PROBABILITY x EXPOSURE = RISK**

**Risk to firefighters is reduced by decreasing probability and limiting exposure.**

One disadvantage of using retardant, foam or water enhancers could be the added hazard they may cause by increasing slipperiness of rocks or ground fuels. A mitigation is to brief firefighters.



## TRAINING & EDUCATION

Historically the efficiency of aerial fire suppression resources was determined by the type of aircraft, fixed or rotary wing, the payload or tank capacity and air speed. All aircraft were capable of delivering water and retardant and some could deliver foam.

Since BLAZETAMER380™ is now approved and available, it must now also be considered when evaluating the overall effectiveness of fire suppression aircraft. A load of BLAZETAMER380™ is more than twice as effective than the same volume of water, due to drop characteristics, evaporative loss, endothermic properties, weight/volume, canopy penetration and line production. Additional efficiency is also gained with onboard injection systems that reduce ferry time, allowing aircraft to deliver multiple loads of BLAZETAMER380™ without returning to a base for suppressant or retardant.

For example, an airtanker with a 3,000-gallon tank can deliver that amount of retardant in an hour. A FireBoss with a 750-gallon load with an onboard injection system may be able to deliver 4,500 gallons or more in the same timeframe. If the water delivered from the FireBoss is injected with BLAZETAMER380™ it will be at least twice as effective. The load of retardant contains only 2,550 gallons of effective suppressant when used for direct attack since 15% of the load is comprised of chemicals that are not effective for suppression.

### **IF YOUR AGENCY PROVIDES YOU WITH BLAZETAMER380™, YOUR ABILITY TO MAXIMIZE EFFICIENCY AND EFFECTIVENESS, WILL DEPEND ON INDIVIDUAL FIREFIGHTERS.**

Firefighters must be aware of capabilities and limitations of aircraft, what types of water enhancers are available to them, when to use them and how to properly mix and apply them.

Incident Commanders and Air Tactical Group Supervisors (ATGS) must request the proper suppressant for their given situation and tactics. When building Situational Awareness (SA) for any given day, in addition to determining what aircraft are available, they must also determine what products are available at individual aviation bases and how to properly request them.

- Retardant for indirect attack
- BLAZETAMER380™ for direct attack.
- BLAZETAMER380™ is more effective and cost effective than retardant
- Save over \$1,000 per 700-gallon load

ATGS / Air Attack Officers must also:

- Be aware of the different products and characteristics of each so proper tactics are employed.
- Make recommendations to IC's.
- Brief and direct air-tanker and helicopter pilots to ensure products are applied appropriately.

BioCentral Laboratories Ltd along with its distributors stand ready to participate in, and support training opportunities that educate fire personnel about suppressants.



# FREQUENTLY ASKED QUESTIONS:

**Facts:** BLAZETAMER380™ is not a Gel or a Foam. It is a polymer-based Water Enhancer that is non-toxic, non-corrosive and environmentally safe. BLAZETAMER380™ is a non-coloured, liquid concentrate elastomer that can be tank mixed in ground equipment and stored without flushing the tank, nozzles or hoses for months.

**Q.** Mixing of some gels can be difficult, what about mixing of BLAZETAMER380™?

**A.** Our mixing systems are approved for both in-flight injection for skimmers, helicopters or ground loading aircraft at an airport or other suitable location. The Pay's aviation in-flight injection system for the Fireboss and AT-802 have received a Supplemental Type Certificate from the FAA. An in-flight injection system is under development for the Bombardier CL-415 and CL-215T aircraft. SEI Bambi Buckets have conducted tests with BLAZETAMER380™ and have found that there are no adverse affects to the materials used in the buckets.

Our FastFiller induction systems are easy to operate, self-contained and highly mobile. Our system can be effectively hauled to a temporary base in the back of a pickup truck and can be operational with one trained person in minutes. A new suitcase sized system has been developed and can be easily transported by ground or aircraft to support remote locations.

**Q.** How quickly will BLAZETAMER380™ properly blend with water?

**A.** In normal applications BLAZETAMER380™ will mix between 2-3 minutes and in extremely cold water situations we recommend a slightly longer agitation period.

**Q.** How does water quality pH and other characteristics relate to mixing of BLAZETAMER380™?

**A.** Due to BLAZETAMER380™ being an elastomer or long chain polymer it is unaffected by water qualities or salinity and varied mixing rates should only be due to application or delivery method. \*\* BLAZETAMER380™ has been proven to lower the salinity or corrosiveness of salt water considerably when mixed for firefighting applications.

**Q.** Some Gels require thorough cleaning of hoses, tanks, and storage containers because, if not cleaned in a timely manner or overdosed the Gel material will thicken to a gelatinous state and leave a residue that is very difficult to remove, Does BLAZETAMER380™ also have that problem?

**A.** No, unlike Gels, BLAZETAMER380™ in its concentrated or blended forms can remain in tanks, hoses, and have other aircraft contact and not result in clogged lines, nozzles, nor result in detrimental outcomes to aircraft components. As an aside, the polymeric technology used in BLAZETAMER380™ can lubricate moving components that it contacts due to its slippery nature.





W W W . B L A Z E T A M E R . C O M

*\*\* Engineered for the U.S. market, for further sales and consultations please contact your local distributor.*

*For sales and consultations within  
Australia and New Zealand, contact  
Chubb.*



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