FIRESTOPPER

FINALLY…A DEPENDABLE WEAPON DESIGNED & MANUFACTURED TO STOP ALL FLAMMABLE ENVIRONMENTS, SAFELY & RELIABLY…

DEVELOPED TO DEFEND STRUCTURES, FLAMMABLE WILDLAND GROWTH & MORE…
EPA1633 CERTIFIED

Marketing Department: Technical

WHITE PAPER

FIRESTOPPER®
Industrial - Commercial
Government

INTRODUCTION

FireStopper® International Limited *(FireStopper®), a transnational Registered Company, is the developer of the world's most advanced and uniquely powerful firefighting and anti-explosion* ***"Proprietary Technology,"*** *within the meaning of the Uniform Trade Secret Act ("UTSA") Cal. Civ. Code Sec. 3426, Common law, Business and Profession §17200 and all other applicable U.S. and International statues, which also produce environmental remediation and other supporting applications.*

Since its inception, FireStopper® has devoted over 30-years of its existence to R&D and market research. As a result, the FireStopper® FFC Technology is the most advanced, stand-alone, to extinguish every flammable event. Demonstrating its superior position by the vast Global testing and certifications results unsurpassed by the industry.

Such achievement is afforded by way of unprecedented results in fire ratings, usage, and environmental certifications. Without exception, all certifications have been granted through the most respected testing and certification facilities domestically and internationally.

Moreover, this unique Technology has delivered the only available ***"all fire class"*** *effective and* ***"anti-explosive"*** *extinguishment products, which are all* ***Non-Toxic, Non-Irritant, Environmentally Safe and Non-Hazardous, among other accolades****. This is evident by the confirmed results issued by the most demanding environmental, life and materials exposure testing and certification bodies. The FireStopper® "Brand" is unquestionably the best overall provider of safe and usable Products over all others in the explosion/fire and safety channel of business.*

The Company continues to maintain its commitment to deliver far and away the most advanced technological lead over the industry standard. When the need for change is compelled, FireStopper® responds by demonstrating its ability to deliver to the demands for better products. It does so by bringing forth superior advancements whenever revision is needed. The intent is to insure and support maximum safety to the first responders, the recipients of the fire service, the people, the environment, and the Planet.

On point, FireStopper® undertakes the task of engineering and manufacturing a full complement of superior performing hardware arrays formidably and comprehensibly solving the long-standing unacceptable result of "Wildlands" firefighting.

"FireStopper® is focused on preventing the wanton destruction of needed natural resources and biological undisturbed growth, displacement of wildlife, and most important the loss of human life and assets."

In support of the above, below is a list of certifications supporting the stand-alone position of this technology and Products:

Handheld Portable Extinguishers:

ANSI/UL711, ULC – Southwest Research Institute (San Antonio, TX)
Defense Logistics Agency (DLA) US Gov. NSN Approval #s' (Approvals available online @ DLA)

EN3-7; EN3-8[1] – MPA, Dresden (Germany)
CE[2] – DNV

Firefighting Foam Concentrates:

EN1568 – MPA Dresden
ICAO – CNPP (France)
IMO – MPA Dresden, Lloyds Registry, DNV, MED
CE, UL162, and UK MoD

Environmental Testing:

NAMSA, USA
Associated Laboratories, CA USA
Environmental Medicine, Inc., USA
OPUS, Ltd., UK; Pace Analytical - Pace Analytical - EPA 1633

BACKGROUND

In 2001, FireStopper® was invited by the BLM (Bureau of Land Management) and The BIA (Bureau of Indian Affairs) to assist in the extinguishment at the Virginia Lakes Complex fire in the State of Washington (the largest fire of that year in the U.S.) and to protect all structures in the line of fire. Result:

- *None of the structures that were pretreated with FireStopper® first generation concentrate AB40002 FFC (Fire Fighting Catalyst) caught fire or were damaged by the fire.*

- *FireStopper® was invited to provide its product to guard in the event of a breach by fire into the protected perimeter. At the first incident where the fire broke through, FireStopper® was deployed in the tank of three (3) fire engines closest to the event and with this limited lineup of apparatus, they were able to stop the progress and extinguish the breach thus, rendering the fire dead and at its end. Said breach engulfed approximately six (6) acres.*

- *Based on the overall superior performance, FireStopper® AB40002 FFC was additionally deployed, using an all-terrain vehicle equipped with a firefighting kit carrying approximately 200-gallons of 6% premix. Said assignment was to the post surface fire, to clean up the underground fires. The assigned area was approximately six (6) acres, which singlehanded it completed the task in record time over the standard operational assign's procedure. There were no smoldering spots or flair ups in the FireStopper® post fire clean up. This was not the case with the SOP's performance.*

Subsequently and pursuant to the exceptional performance, FireStopper® was invited to submit its product for listing in the U.S Forestry QPL[3]. However, since the FireStopper® Technology is a closely held trade secret and the U.S Forestry/USDA Missoula, Montana testing facility demanded full disclosure of its trade secret, FireStopper® respectfully declined the invitation.

[1] This Standard refers to hardware durability, reliability, and efficacy.
[2] This Mark assures manufacturing quality through yearly inspections.
[3] Quality Products List

The first Gen. product, AB40002 FFC, was the spearhead product of this unique technology. It was a six (6) percent foaming concentrate, which unlike other aqueous foaming concentrates, e.g., classes A foam or AFFF, was designed for use against all fire class events.

This FFC could also be deployed from an airborne system or ground application without the need for special equipment, training or the need for additional safety hardwear.

Moreover, AB40002 FFC was certified Non-toxic, Non-Irritant, Non-Aggressive, and safe to the environment unlike the currently employed legacy forestry QPL products, but more specific, the widely used Phos-Chek slurry, that require special time consuming, training, in the field compounding, expensive special equipment all for marginal effectiveness; class A foam is also marginal in providing any reliability in wildland and all other applicable fire protection. None of the products currently employed by US Forestry of Cal-fire are "GREEN"/environmentally safe (except water) or efficiently enough to quickly put an end to the fire event.

Under normal circumstances, the consistent record of failures to extinguish or stop a wildfire by the current regiment of inefficient products, exclusively employed by forests fire Government responsible Agencies, would in any other segment of business be deemed as massively negligent with huge liabilities for the mismanagement of the Peoples overall safety.

Now, FireStopper® with its second generation of products has raised the bar so high that the Global competitors will need at least 50-years to catch-up.

DISCUSSION

All products currently available for wildland firefighting, including the expensive and inefficient utilization of water resources, have demonstrated a tendency to cause significant destruction, loss of life, and damage to assets. Their undeniable failures have shown that they represent a considerable drain on National Treasures.

In the complex current Global Political landscape, where there is intentional mismanagement of fire emergencies and a widespread misconception that the Federal Government and the populace can be held hostage to such malfeasance, a rude awakening is on the horizon. There is a growing awareness of the extensive fraud present within the fire protection framework.

Inaction and misrepresentation are being enforced for the benefit of a select few rather than for the welfare of the public. With the recent ban on products containing "Forever" chemicals, the demand for clean and reliable extinguishing agents has elevated the standards for firefighting products. Given the current circumstances, it has become essential for FireStopper® to discontinue its first generation of products in favor of its second-generation product line, thereby creating a significant distinction from all other competitors.

Wildland Fire Mitigation:

1st Generation concentrates: AB40002 FFC, a 6% usable product now replaced with ***FireStopper® Disruptor™ 3610 FFC*** *usable at either* ***3%*** *or* ***6%*** *for firefighting and 10% for structures protection in the line of fire. The pre-spray recommendations are meant to apply to the end-user's discretion and equipment limitations.*

Chart 1

FIRESTOPPER COMPARISON

FireStopper® (All liquid products are Fluorine Free, Certified "GREEN")	Phos-Chek®*◊ MVP-FX, F & 259-F (Dry Powder)	LC95A, FX, & F	LC95W
NON-TOXIC, *"GREEN"*	Toxic	Toxic	Toxic
NON-CORROSIVE	Corrosive	Corrosive	Corrosive
CLEAN AGENT **EPA1633**	Not A Clean Agent	Not A Clean Agent	Not A Clean Agent
NON-IRRITANT (SKIN & EYE)	Irritant	Irritant	Irritant
ENVIRONMENTALLY SAFE (Flora, Fauna, Rivers & Oceans)	Pervasive in the environment; kills fish flora & fauna	Pervasive in the environment; kills fish flora & fauna	Pervasive in the environment; kills fish flora & fauna
NO SPECIAL EQUIPMENT FOR MIXING OR APPLICATION	Require onsite mixing with special equipment	Require onsite mixing with special equipment	Require onsite mixing with special equipment
ALL FIRE CLASS EFFECTIVE: ABCDK	Fire Class: A only**	Fire Class: A only	Fire Class: A only
TECHNOLOGY: (FFC) FIRE FIGHTING CATALYST	Ammonium Phosphates +	Ammonium Phosphate +	Ammonium Phosphate +
EXTREME LOW EVAPORATION water thin; deep penetrator	Slurry (viscus)	Slurry	Slurry
MASSIVE TEMPERATURE REDUCTION	No temperature effect	No temperature effect	No temperature effect
EXTREME RETARDANT PROPERTIES NO RE-IGNITION POST EXTINGUISHMENT	Thick coating	Thick coating	Thick coating

** Phos-Chek employ "polyphosphates" mono ammonium phosphate/ Diammonium phosphate, etc., in the variation of their formulas as the lead retardant ingredient. In the massive use of these retardant, as in wildland fires, have an environmental devastating effect short and long term. Wildland fire fuel is composed of class A and class B fuel. The oils and turpentine are classified as B-type fires and based on the viscosity and auto ignition temperature of the oils it may fall in the K class thus, ineffective on other inherent fuels making-up the wildlands fire fuel potential*

◊To deliver the final form, which is a slurry, the Phos-Chek dry chem retardant require expensive, on sight, hardware equipment and specially trained personnel

In addition, according to the Los Angeles Times, in an article published 1 October 2020, outside of the Phos-check product being a "Sticky Gooey" slurry, the then raw cost per gallon was at approximately $2.50/gal; sub. This did not take into consideration the cost of Onsight equipment to properly mix the slurry, the cost of training for the process, man-hours, and the cost of air dropping the product that does not extinguish or stop the progress of the wildland fire; subsequently it has been published that the slurry now has a raw cost of around $4.54/gal.

As in all wildlands fire events, whatever the cause of the initial fire may be, the flames consume the flammables onto the root requiring that whatever is being used not only extinguish the crowning fire (fire that consumes the trees to the top), the material must also penetrate the surface in order to extinguish the interior of the burning tree or bush but it also ideally must run down into the grown to the roots.

Chart 2.

Cost per gallon comparison: FireStopper® vs. Phos-chek

PRODUCT/ USAGE	COST/GAL	PENETRATION	COVERAGE	Surface tension
DISRUPTER 3610 FFC@ 3%	$2.53/gal◊	Deep to the fibers	Crown to root/water thin liquid large perimeter coverage	21-dynes
PHOS-CHECK	$2.50 (2020-price)	None-thick slurry	Does not run-down	High/slurry

◊ Please note: the physical structure for a highly penetrating liquid such as the Predator FFC affords greater coverage without the need of special processes in contrast to a slurry. Thus, additional cost savings by application and by efficacy since FireStopper® will extinguish the source of the fire quickly and effectively, cool the environment, cause no damage to structures, wildlife, equipment, or the environment; all without the need for special equipment or special training to create a delivery ready product, and more…

Other Advantages of FireStopper®

FireStopper® offers a full line of handheld & large volume portables suitable for all fire hazards and applications:

*1st Generation PREMIX: PFE-FR FFC replaced with the **FireStopper® Predator™ FFC.** As with every FireStopper® FFC, all liquid media are all fire class effective (ABCDK) and all flammables effective including nuclear related flammables. They are also Non-Toxic, Non-Irritant to skin or eyes, Non-Aggressive, and Environmentally Safe; will meet and exceed all globally recognized fire related standards including safety in exposure to humans, animals, equipment, and the environment.*

Chart 3.

FireStopper® PREDATOR FFC* *(A Premix Formula)*

PRODUCT	SPECIFICATION	USAGE
FireStopper® "PREDATOR" FFC◊ • No Halogens, absolutely **NO FLUORINE**	• Liquid premix • Temp resistant: <-99°F to >140°F • Low viscosity to water thin	• All fire class effective[4] ABCDK & sub-classes including Nuclear related flammables All environments use and applications

** The "Predator" FFC is NOT commercially available; it is exclusive to FireStopper® Trademark handheld, large volume portables and fixed systems*

This distinctive technology, derived from 21st Century Quantum Chemistry, has enabled the FireStopper® Companies to make representations solely based on results obtained from third-party testing and experiences, setting them apart from other developers and manufacturers in this sector.

[4] *The Predator is effective on all flammables including Nuclear Industry related exotic flammables.*

However, it is crucial to recognize that contemporary wildland fires pose a serious risk of encountering man-made flammable materials. This modern reality significantly heightens the risk of failing to extinguish hazardous situations if the extinguishing media used is restricted to a single type of flammable, such as water, class A foam, or dry chemical-based slurries. These increasingly prevalent flammables are found in vehicles, cell phones, computers, and various devices that utilize Lithium-ion batteries.

Given the extreme temperatures now associated with wildland fire incidents, transport vehicles, firefighting apparatus, and other equipment made from rubber, plastics, and other volatile materials are likely to ignite if exposed to fire. The currently available extinguishing media are entirely ineffective, thereby exacerbating existing fire hazards and leading to potentially fatal outcomes.

To further emphasize the necessity for innovation, the global shift towards Lithium-ion batteries for most portable energy requirements has intensified the demand for a viable solution to these emerging catastrophic environments. A new term has been introduced to describe the guaranteed destruction caused by this phenomenon: "The Thermal Runaway Lithium-ion Battery Effect." [5]
Fig. 1

The latest statistics from the US Fire Administration and NFPA confirm the following:
"Each year, wildfires in the United States cause economic losses totaling between $63 to $285 Billion"

Chart: 4

Fires, Deaths, Injuries, & dollar loss

[5] Quality Products List

Fires	*1,291,500 in 2019*	*-3.2% from 2010*
Deaths	*3,704 in 2019*	*+24.1% from 2010*
Injuries	*16,600 in 2019*	*-12.5% from 2010*
$ Loss	*$14.8 billion in 2019*	*+74.5% * from 2010*
No Large $	*$14.8 billion in 2019*	*+9.5% ** from 2010*

** Adjusted to 2019 dollars. Direct dollar loss includes: 2011 – the Bastrop County Texas Complex Wildfire ($400,000,000), 2012 – the Waldo Canyon Fire and the High Park Fire in Colorado ($567,400,000 total), 2013 – the Black Forest Fire ($420,500,000) in Colorado, 2015 – the Valley and Butte Wildfires in California ($1,950,000,000 total), 2016 – the Gatlinburg, Tennessee Wildfires ($911,000,000), 2017 - Northern California wildfires ($10,000,000,000), and 2018 – California wildfires ($12,400,000,000).*
*** Adjusted to 2019 dollars. Excludes the large loss fires listed above.*
See: National Fire Protection Association for more statistics on U.S. fire loss.

The National Agency, US Forestry, recognized as the sole guardian of the wildlands that constitute a significant portion of the "Commons," has exhibited considerable incompetence throughout its history.

By willfully neglecting their responsibility to adopt new technologies that have been shown to improve the effectiveness of extinguishing these frequently occurring and destructive incidents, they are undeniably accountable for all losses incurred during their administration. It is essential for all citizens to understand that every taxpayer funds the unproductive expenditures that fire services generally engage in, resulting in their failure to extinguish fires. This has become a pointless drain on the Treasury of this Nation.

The public cannot depend on municipal fire services to protect their homes in the event of a fire. Many individuals are unaware that across the country, fire departments have been instructed to utilize only water to manage the progression of fire incidents in structures and other fire sources. The reality is that water is ineffective against most flammable materials, and this fact is deliberately ignored.

In the current landscape, the two primary sources of fire in residential settings are in the kitchen when using cooking oils, classified as class K, and from Lithium-ion batteries or electrical failures; water proves ineffective against both types of fires. It is crucial to remember that applying water to hydrocarbon fires (fuels and solvents) is entirely ineffective and poses significant dangers.New and advanced technologies can be applied globally to change the course of fire protection. Devises

built-in into a system that can act as an extreme early warning mechanism, by detecting and confirming that a fire potential has erupted, can for the first time alert the authorities and the People, if necessary, of a potential major fire event while instantly deploying an automatic failsafe product like FireStopper®.

The Innovation:

*The **ICE System™ (Identify Confirm & Extinguish)** will deploy an all-flammables effective extinguishing media to end the state of fire swiftly, economically, and reliably.*

*For portable and fixed systems, the agent of choice is **FireStopper® Predator FFC™.** This product is exclusively designed for use in conjunction only with FireStopper® Trademarked portable and fixed systems.*

The agent is non-corrosive, non-irritating to the skin and eyes, environmentally safe, rated for all fire classes, and can be effectively utilized in extremely low temperatures. Due to its exceptional capability to combat fire, only relatively small volumes are necessary to extinguish flames, thereby effectively suppressing the incipient fires.

The Predator FFC™ is applicable in scenarios ranging from fueling operations to small electrical fires, which can escalate into completely destructive and life-threatening situations. A configuration of the ICE™ system can be tailored and installed for all foreseeable applications, as it can be adapted to suit the needs of any potential flammable or explosive environment.

This technological advancement eliminates the need for expensive, restrictive, and hazardous systems that pose risks to life and the environment, which are clearly outdated and still marketed globally. The so-called "cleanroom fire protection systems," which are commonly used today to safeguard electronics and other high-value assets where water or dry chemicals would be too damaging, continue to depend on fluorinated steaming gases.

These Halon replacement products contribute to the proliferation of "forever chemicals" in the environment. Furthermore, they do not influence temperature and require large volumes of gas to displace the oxygen in the area they aim to protect; not to mention the significant costs associated with the use of this system.

*A major difference between the currently employed gas system and **FireStopper® ICE™** is that these gas deploying devises are reactive and the **FireStopper® ICE System™** is proactive. Thus, ICE™ is the conduit to eliminating the necessity for large volumes of product that could propound lethality and many hours of cleanup before reentering the affected area. The relatively small quantity of the FFC needed to end the fire potential, with little or no cleanup, simplify the process of use and reduce costs all around.*

Although, when addressing the electronics industry, particularly computer banks and server farms, the risk of fire is currently managed by gaseous, oxygen-depleting agents that necessitate the evacuation of personnel and the sealing of the affected perimeter or room until all gas has been removed; for clear reasons, as previously mentioned, water is not utilized.

Due to its high efficiency in combating fire and its temperature detection capabilities, ICETM and the Predator FFCTM, for the first time, provide exceptional effectiveness in all facets of its implementation by swiftly eliminating all fire risks that could lead to significant damage to operations within the electronic environment, thereby improving daily business functions.

The most remarkable and innovative feature that ICETM presents is its ability to validate, confirm, and alert prior to the deployment of the required volume of product to neutralize the threat.

Within the ICETM System, FireStopper® has created a concept aimed at delivering the Disruptor 3610 FFC using Hercules C-130 Military cargo aircraft to extinguish and halt wildfires that occur in remote locations, as this system's application provides a viable solution (a supplemental "White Paper" is available upon request).

CONCLUSION

It is not difficult to understand that, in pursuit of material wealth, humanity has strayed from its path and now teeters on the brink of an endless abyss. One can explore the internet for various representations that attempt to substantiate many of our assertions; however, these claims lack a solid foundation and do not have third-party validation.

This is where FireStopper® distinguishes itself significantly from the rest of the fire and safety sector. The challenge is evident; we are prepared to showcase, in a direct comparison, any fire exercise deemed suitable for the challenge if required.

"We are prepared, willing, and capable of providing, once and for all, the solution to the most pressing threat of fire and explosion that endangers the world both now and in the future."