Ascension Technologies, Inc.
9119 S. Gessner, Suite 200
Houston, Texas 77074
281-271-8531
www.ascensiontechnologies.biz
info@ascensiontechnologies.biz

FireShield™ FAQ

What is FireShield™?

FireShield™ comes from a family of products known as PetroLuxus™ and were developed over the past fifteen years of study and trials. The products are proprietary in nature and were originally developed to liberate hydrocarbons from a variety of materials and media. All PetroLuxus™ products share basic and inherent characteristics to act with hydrocarbons and other materials on a molecular level and cause them to lose their attraction to each other. All PetroLuxus products also have previously carried an NSF/60 certification rating making our product safe to use around drinking water, wildlife, aquatic life and plants.

FireShield™ is a fire retardant solution engineered to inhibit the ability of combustible materials to ignite from various heat sources. Once the materials have been treated, wet or dry, the treated materials will not combust or ignite when introduced to an ignition source.

FireShield™ is a highly concentrated product with an elevated pH. FireShield™ is a non-toxic environmentally safe product that is odorless. Once FireShield™ breaks down and decomposes it will leave no harmful byproducts behind to endanger the environment.

(Appendix A: FireShield™ Product Data Sheet**)**

Is FireShield™ Environmentally-Friendly?

Yes, FireShield™ is an inorganic compound and thus contains no organic compounds, toxic metals, or their salts. The environmental fate of FireShield™ is silica, the same material as found in beach sand. The chemistries of FireShield™ pose no threat of persistence in the environment, no bio-accumulation, nor toxicity when used at the recommended concentrations and carries an NSF/ANSI 60 Certified liquid cleaning solution and meets the regulatory requirements for the USA, Canada, Israel, Saudi Arabia, Spain and the UAE.

Can FireShield™ be used around Potable Water?

Yes, FireShield™ comes from a family of products that have previously been tested to NSF/ANSI Standard 60 certifications. NSF/ANSI (American National Standards Institute) Standard 60: Drinking Water Treatment Chemicals – Health Effects by governmental agencies that regulate drinking water supplies. Developed by a team of scientists, industry experts and key industry stakeholders, NSF/ANSI Standard 60 sets health effects criteria from many water treatment chemicals including:

- Corrosion and scale inhibitors

- Coagulants and flocculants
- Disinfection and oxidation chemical
- pH adjustment, softening, precipitation and sequestering chemicals
- Well Drilling aids
- All other specialty chemicals used in drinking water treatments

For additional information on NSF/ANSI Standard 60, please visit: http://www.nsf.org/services/by-industry/water-wastewater/water-treatment-chemicals/nsf-ansi-standard-60/

(NSF/ANSI Standard 60: Certificate # **CO142260-01**) / **(Note: this is currently being updated)**

Is FireShield™ harmful to humans?

FireShield™ is shipped in its concentrated form. It has a very high pH – 12.5+. Although the pH is high, it is highly buffered in its concentrated form, though if it is spilled on skin it will not harm. But follow the safety handling instructions as specified in the MSDS.

(**Appendix C:** FireShield™ Material Safety Data Sheet)

How is FireShield™ designed to perform?

FireShield™ was designed to be an oxygen scavenger thus not allowing any oxygen to associate with the matter that it has come in contact with. This oxygen scavenging attribute along with its inorganic chemical makeup make for a perfect combination to fight forest fires using current methods of distribution by air drops. Current forest fire retardants are water-based mixtures and often contain ammonium, phosphate salts and other additives, which are typically dropped on wood fuel in advance of a fire. The salts promote charring of wood materials, so the mixture continues to provide fire retardancy after the water has evaporated. The distinctive bright red coloring is an added dye that makes it easier for responders to keep track of treated areas.

While they are generally not considered harmful to humans, these wildland fire fighting products can cause unintended harm to ecosystems if they are not used carefully. Components of these mixtures can be toxic to aquatic life (for example, if they are accidentally dropped into streams or bodies of water). If sprayed on mountain streams, the retardant dissolves and releases ammonia, which is toxic to fish. Ammonia, the Forest Service says, is the most toxic ingredient in long-term fire retardants. A release of hundreds or thousands of gallons of fire retardant can wipe out fish life for miles along a stream, according to the Forest Service Employees for Environmental Ethics (FSEEE).

ASCENSION TECHNOLOGIES

How many different chemicals does it replace?

Depending on the operation and the current chemicals be used, FireShield™ can replace between 4-8 different chemicals. This cost benefit makes FireShield™ an exceptional value proposition and greatly mitigates the potential of human error while mixing chemicals.

Where can FireShield™ be applied?

FireShield™ can be applied directly to any surface with an ordinary paint brush, garden sprayer or paint sprayer apparatus in dry conditions. For larger fires, FireShield™ can be dropped from planes that are typically used in the fighting of forest and brush fires.

Is FireShield™ a biocide?

NO! Biocides work on the mechanism of poisoning bacteria. Biocides such as chlorine work by poisoning the bacteria, although some stronger bacteria species have a survival mechanism whereby, they move back into their protein protective shell. This allows the bacteria to survive the poisoning.

Environmentally-friendly FireShield™ works on the mechanism of destabilizing the homeostasis - The ability or tendency of an organism or a cell to maintain internal equilibrium by adjusting its physiological processes. FireShield™ chemistry disrupts the bacteria's ability thrive through a "coating" mechanism with coats the bacteria and/or the food source for the bacteria. This mechanism does not allow the bacteria to survive or thrive.

(**Appendix D1 & D2**: Sangre de Cristo Laboratory Results – Please review Lab notes)

Is FireShield™ a surfactant?

No. It has surfactant like qualities in that it readily reduces surface tension that allows oil to release from other materials. The mechanism involved is disruption to weak hydrogen bonding of oil to surfaces. FireShield™ is derived from inorganic materials; surfactants are typically made from organic materials which possess entirely different chemical properties.

Will FireShield™ harm my equipment?

No. in fact, FireShield™ will improve metal production components by cleaning and leaving a layer of protection to reduce further problems.

ASCENSION TECHNOLOGIES

How long does a FireShield™ treatment last?

This has not been firmly established yet. For example, one of the earliest wells treated with FireShield™ brand product was for the US Department of the Interior's Bureau of Reclamation in Colorado.

How is FireShield™ shipped?

FireShield™ is shipped in various size containers.

275 gallon IBC Totes (Actual 250 gallons)

55 gallon drum (Actual 50 gallons)

5 gallon pail

Are any hazardous placards required for transport?

FireShield™ is an environmentally-friendly product that is certified to NSF/ANSI Standard 60 – Chemicals used for the treatment of potable water. It is non-toxic, non-flammable and non-hazardous. There is no DOT restriction in the United States thus no Hazardous placards are required for transport.