

FS-01

FIRE SUPPRESSANT

Wildfires

MANUFACTURER: GREEN CANYON VENTURES

CLASSIFICATION:

OSHA 3844-02 201/026: Non-Toxic

EU 1272/2008: Non-Toxic

DESCRIPTION

FS-01 is an innovative product developed by Green Canyon Ventures. The product is designed to suppress wildfires either directly or indirectly.

FS-01 works on any type of vegetation.

The product is optimal for use by any fire department, requiring no special equipment modifications. Upon contact with the heat of the fire, **FS-01** triggers an endothermic reaction, releasing massive cold in the form of nitrogen, dramatically lowering the temperature in the fire area and causing extinction. Unlike retardants, which act on the flame only by slowing the combustion of the combustible material, **FS-01** reacts with the heat, massively affecting all three sides of the “Fire Triangle” (Heat, Oxygen, and Fuel), resulting in rapid and safe wildfire extinction in seconds.

The product is supplied as a concentrated liquid to be mixed with water prior to use.

COMPOSITION

FS-01 is a product resulting from the combination of various nitrogen-based compositions, modified clays, and other minor elements.

PACKAGING

FS-01 is supplied to customers in the following formats:

- 1,000-liter palletizable IBC totes.
- 10-liter or 25-liter jug.



FS-01

PHYSIOCHEMICAL PROPERTIES

FS-01 is a product that presents a whitish liquid appearance. Upon customer request, red color can be added for application. Over time, some components of the formula may settle, requiring gentle agitation before use; this does not affect its effectiveness. **FS-01** is highly soluble in water.

The product is estimated to have a shelf life of 2 years.

Viscosity (cP): ≥ 200

Density (g/cm³): 1.35 Sedimentation: settling of components.

pH: 6.5 - 7

Thermal resistance: superior to 1,000 °C

Freezing point: -20 °C

The product is non-toxic and biodegradable.

Non-corrosive.

FS-01 does not contain PFAS.

Safe for the Environment.



RECOMMENDED APPLICATIONS

FS-01 is a fire suppressant product designed for combating **wildfires** and **Class A** fires.

MODE OF USE

FS-01 is used with the same equipment available to any fire department. No special implementation is required, other than mixing the product with water. The mixture is prepared at 15% or a 1:5 ratio with fresh or seawater.

FS-01 enables firefighting teams to operate more effectively and safely, extinguishing the fire in significantly less time than with other products on the market.

MODE OF USE:

FS-01 is designed for direct or indirect application.

GROUND-BASED COMBAT

Indirect Attack:

From the ground, application can be carried out using tanker trucks, tanks with motor pumps and application lances, or backpack sprayers. Once the direction of the fire's advance is determined, an application line at least 3–5 meters wide is created, acting as a barrier in front of the fire's progression. This line should be applied far enough ahead of the fire to allow safe and effective preparation. Once completed, firefighting teams retreat from the area to allow the fire to reach the defensive line where the product was applied.

IMPORTANT: For the application line to be effective, the entire vegetation surface—from the top down to the ground—must be thoroughly wetted with the product.

Direct Attack:

Although indirect attack is recommended for safety reasons, **FS-01** can also be applied directly to the fire with full effectiveness. The endothermic reaction that the product has with the heat of the fire will cool the area through the massive release of nitrogen, allowing firefighting crews to approach the fire source safely and quickly due to the drastic temperature reduction in the affected zone. The nitrogen released upon application of **FS-01** will protect firefighters from the fire's radiant heat, enabling much faster fire extinguishment.

To apply **FS-01** correctly in a direct attack on the fire, open the hose nozzle slightly to create a wider pattern for thorough wetting of the entire affected area.



Examples of valid equipment



AERIAL COMBAT

Indirect Attack:

For aerial use of **FS-01**, no new modifications are required in the aircraft. **FS-01** works without issue from any aerial platform (airplanes, helicopters, or drones). Similar to ground operations, aerial resources will create a defensive line ahead of the fire’s advance, with safety and overlapping drops to ensure no gaps in the application line. Generally, a single drop is sufficient to thoroughly wet the vegetation down to the ground. For aerial application, the use of **FS-01** with red color is recommended.

Direct Attack:

Although not recommended for safety reasons, if necessary, **FS-01** can be applied directly onto the fire from aerial platforms. In these cases, it is critical that **FS-01** be applied across the entire affected area, as any untreated spots could allow the fire to continue spreading. For this reason, indirect attack with aerial resources is always preferred—it is much safer (no smoke or updrafts) and more effective.



Examples of valid equipment

SAFETY AND HEALTH INFORMATION

- Risks: Very low (mild irritation upon eye contact).
- Environment: Non-toxic and biodegradable.
- First Aid Measures: Rinse affected area thoroughly with plenty of water.
- **In case of emergency, call:**
 - USA: 911
 - Europe: 112
- Storage: Between -20°C and 50°C in sealed containers and away from direct sunlight.
- **Since FS-01 contains water, it conducts electricity. DO NOT USE ON ELECTRICAL FIRES.**

COMPATIBILITY

FS-01, being a product compatible with all types of materials, is suitable for applications in any type of wildfire, as well as on any type of structure or building.

Once applied, if it does not rain (as rain would wash away the application), **FS-01** maintains active effectiveness for more than 1 week.

It is recommended to thoroughly clean all equipment with plenty of water after using **FS-01**.



LABORATORY ANALYSIS

<u>Scientific Test</u>	<u>Concentrated Sample</u>	<u>Sample Mixed with Water</u>
Biodegradability OECD 302-B	96% after 28 days Practically Biodegradable	100% after 28 days Biodegradable
<u>Scientific Tests</u>	Sample Mixed with Water	
Fish Toxicity Brachydanio rerio OECD 203	LC-50 (96h) = 6,930 mg/L	Classified as Non-Toxic
Worm Toxicity Eisenia foetida OECD 202	LC-50 (14 days) = 4,697.3 mg/L	Classified as Non-Toxic
Daphnidae Toxicity Daphnia magna OECD 202	CE-50 (48h) > 10,000 mg/L	Classified as Non-Toxic
Oral Toxicity	DL-50 (OECD 423) > 2,000 mg/kg and Non-Irritating	Classified as Non-Toxic
Dermal Toxicity	DL-50 (OECD 402) > 2,000 mg/kg and Non-Irritating	Classified as Non-Toxic
Eye Irritation	BCOP 8.74	Classified as Non-Irritating
Eye Corrosion	OECD 405	Classified as Non-Corrosive
Metal Corrosion	Aluminum = 0.1350 mm/year Copper = 0.0699 mm/year Iron = 0.0415 mm/year Brass = 0.0763 mm/year	Classified as Non-Corrosive