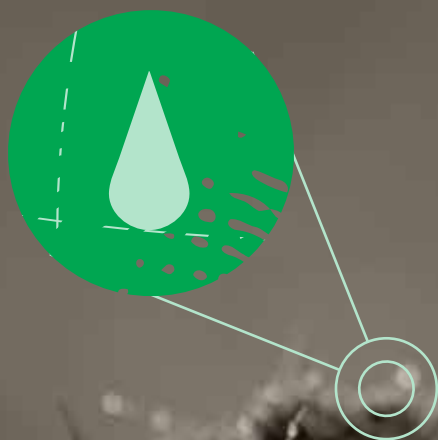




# Fluorine Free Firefighting

**PRIORITIZING  
DEPARTMENT AND  
COMMUNITY HEALTH**





## HISTORY 101

# FLUORINATED FOAM

First generation AFFF and AR-AFFF firefighting foams contained significant amounts of carcinogenic fluorides. These fluorides were deemed carcinogenic by the United States Environmental Protection Agency (EPA). As a result of these findings, C8 and C6 Class B firefighting foam was introduced into the marketplace. These foams contained a lower percentage of carcinogenic fluoride than their earlier counterparts, but their impact on public and environmental health is still high. As a result of increased awareness and education on these 25 known carcinogenic fluorides, fluorinated foam take-back programs have been set in motion.

# 25 KNOWN CARCINOGENIC FLUORIDES

Not all fluorides are bad. We know there's fluoride in toothpaste. We know our local governments add trace amounts of fluoride to the county drinking water supply in countless areas throughout the country. These fluorides are deemed safe to consume in small quantities by the EPA. In 2018, 73.0% of the United States population utilizing community water systems had access to fluoridated tap water.

[CDC.GOV](https://www.cdc.gov)



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# GEL LABS

## 25 KNOWN CARCINOGENIC FLUORIDES

Our first Encapsulator Agent, F-500 Encapsulator Agent (F-500 EA), has been undergoing rigorous testing since its creation in 1997. In 2003, a decade before the PFAS foam crisis began, we began testing our agent for the presence of these carcinogens through GEL Laboratories in Charleston, South Carolina.








## TEST RESULTS

# NONE DETECTED



## ENCAPSULATOR AGENT (EA) VERSATILITY

	<b>CLASS A MATERIALS</b>	<b>0.5% – 1%</b>
	<b>CLASS B FUELS [POLAR + NON-POLAR]</b>	<b>3%</b>
	<b>ENERGIZED ENVIRONMENTS</b>	<b>3%</b>
	<b>CLASS D METALS</b>	<b>3%</b>
	<b>LITHIUM-ION BATTERIES</b>	<b>3%</b>

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**NFPA 18A**

## **ENCAPSULATOR AGENTS (EA)**

### **SECTION 7.7**

This section covers the test procedure to evaluate the ability of a water additive solution to form and maintain stable Spherical Micelles capable of encapsulating combustible and flammable liquids (polar and non-polar), rendering the flammable liquids non-flammable, non-ignitable and non-explosive and maintaining that encapsulation in the presence of high heat over an extended period of time.

### **SPHERICAL MICELLE STABILITY**

## **FLUORINE FREE FOAM COMPARISON**

F-500 Encapsulator Agent (F-500 EA) works on a chemical molecular level, altering the makeup of water. Unlike FFF, it is not limited to Class B two-dimensional fires. It is listed for Class A as well as both Class B two-dimensional and three-dimensional fires. Third-party tests prove its effectiveness on Class D fires and lithium-ion battery fires.

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## TAKE-BACK PROGRAM

# ARIZONA STATE'S AGENT OF CHOICE

The Arizona Department of Environmental Quality budgeted \$395,500 for a one-year program to help at least 29 fire departments get rid of and replace 3,755 gallons of AFFF, said the director of the department's Waste Programs Division. Replacement agents in Arizona can't contain PFAS, she said. The specific suppressant the state will provide, F-500 Encapsulator Agent (F-500 EA), was selected by the fire departments.

**BLOOMBERGLAW.COM**



# FIRE SETTING REPORT

“The use of Encapsulator Agents significantly reduces the amount of water required to extinguish a fire.”

“Its use from day one could have minimized the amount of water used, production of smoke and number of hours worked by Firefighters, but above all its use could have prevented the inhalation of Carcinogenic Fumes by our personnel.”

“The committee is confident that the encapsulating agent reduces firefighter's exposure to carcinogenic contaminants. Furthermore, its' also effective for Class B, Class C and Class D fires while water should not be used on these fires. For these reasons, we are moving forward with the use of an Encapsulator Agent to prevent cancer in Laval Firefighters.”

**LAVAL FIRE DEPARTMENT**

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# FOREVER CHEMICALS

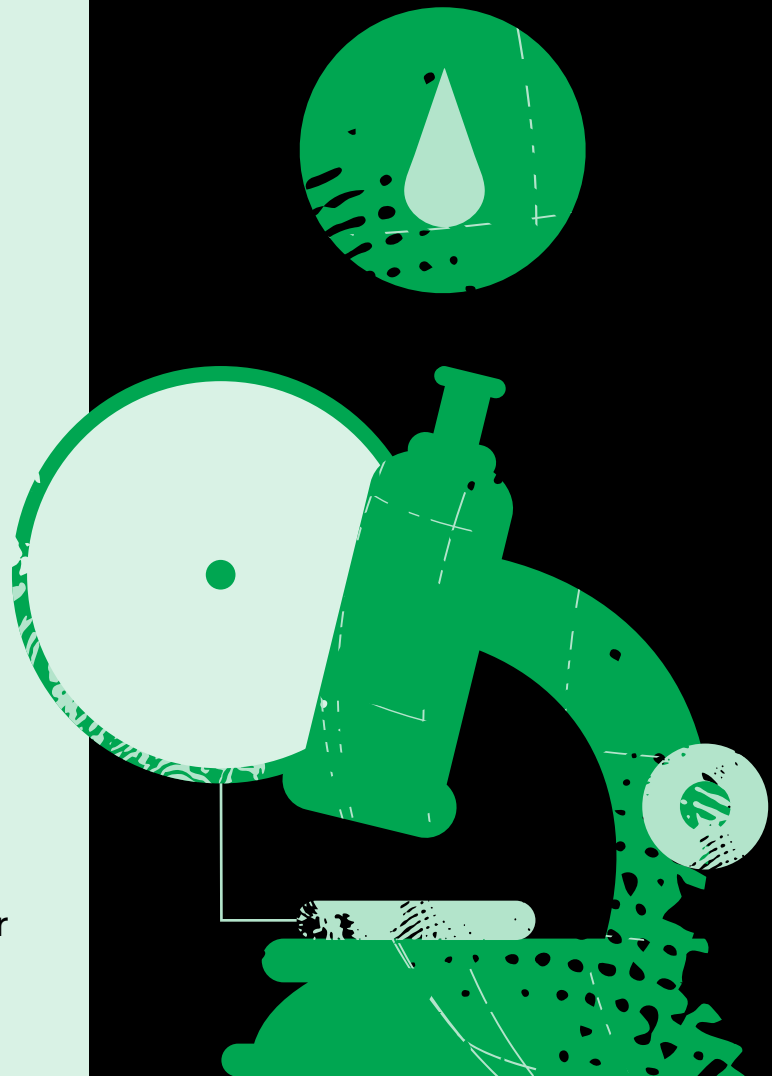
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Forever chemicals, such as fluorine, do not biodegrade. A contaminated site will test positive for PFAS chemicals years later, regardless of the agents utilized there today.

## QUANTIFYING CONTAMINATION

The U.S. EPA's current PFAS limit is 70 Parts Per Trillion (PPT). What does one part per trillion look like? A common analogy: a singular drop in an Olympic sized swimming pool. Using this analogy, the EPA testing limit for 25 fluorinated compounds is the equivalent of 70 drops. F-500 Encapsulator Agent (F-500 EA) has been tested to this strict standard with results showing that none of these PFAS compounds were detected.

Any detection of carcinogenic fluorides below 1 PPB is likely the result of outside contamination through polluted soil, water or synthetic materials like plastic.



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# ORGANIC THROW & GO

We are a proud partner of Amerizorb (Creation Organics). Combining two eco-friendly, innovative products to bring your department an unmatched solution for roadside hazards, including both carbon based and hydrocarbon based spills.

ECO-FRIENDLY

## FLAMMABLE SPILL CLEANUP

Throw & Go Professional cleans up water-based and hydrocarbon spills. It contains enough pumice to provide traction on hard surfaces. It is highly effective at accident scenes and all types of contamination spills, gaining popularity with fire departments and municipalities nationwide. One of the most appealing attributes of Throw & Go is its resemblance to dirt, drawing attention away from spills. Throw & Go provides maximum absorption while remaining environmentally friendly.

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