

SoyFoam™ TF-1122

Cross Plains Solutions



**THE FIRST AND ONLY
GREENSCREEN CERTIFIED
GOLD™ FIRE FOAM**



OUR MISSION:

To create a safe & environmentally friendly firefighting foam that not only contains no PFAS but also no fluorinated chemicals, made from rapidly renewable and sustainable soybeans grown by U.S. farmers.



What is SoyFoam™?

SoyFoam™ TF-1122 is a 'Fluorine Free' biobased, biodegradable, and certifiable direct release to our environment, firefighting foam concentrate.

This product is made from U.S. Soy and other agricultural products.

SoyFoam™ TF-1122 is engineered to be a safe fire combatant while protecting our firefighters and our communities. SoyFoam™ TF-1122 has demonstrated vapor suppression on a variety of Class B hydrocarbon fuel sources and Class A woodland materials. No special handling requirements and it is designed to work with traditional foam concentrate dispensing equipment.

“We’ve used it on structure and automobile fires with **outstanding** results.”

-Jeff King, Assistant Chief, Corydon, KY Fire Department, the first fire department to make the switch to SoyFoam™



Highlights

Clean Production Action has GreenScreen Certified™ 'GOLD'

SoyFoam™ TF-1122 is the **only** firefighting foam to have a **GOLD** rating.

100% Free of PFAS

Test Method US EPA Draft 1633 PFAS Appendix B Analysis, July 5, 2023 SoyFoam™ TF-1122 Results, **Non-Detectable (< 1 ppb)**

Biodegradability

OECD 301B, March 10, 2023

SoyFoam™ TF-1122 to be **'READY'** Biodegradable

Soil Biodegradability

ISO 17556:2019, November 3, 2023

SoyFoam™ TF-1122 achieved 91.6% after 180 days Biodegradation, and 60% after **18-days!** The Standard requirement is 60% after 180 days.

Aquatic Toxicity

OECD 201, OECD 202, & OECD 203, April 6, 2023

96-Hour Acute Selenastrum capricornutum EC50

48-Hour Acute Daphnia pulex LC50

96-Hour Acute Pimephales promelas LC50

Bio-Content

ASTM D6866-22 Method (AMS) TOC, January 21, 2023 70% biobased Carbon Content

USDA BioPreferred

USDA Certified SoyFoam™ TF-1122 at 84% biobased, which is the **highest** of any firefighting foam today.

We are in the process of certifying the SoyFoam™ technology for other entities

Department of Defense

An independent lab has validated that SoyFoam™ has passed all of the 9 burns required by MIL-PRF 32725 on Jet A and gasoline fuels. We are in the process of becoming fully certified, but it can take up to 18-months. Our team is working closely with the Environmental Protection Agency, Naval Research Laboratory, and Federal Aviation Administration to expedite the process.

U.S. Forest Service

The Wildland Fire Chemicals Systems division is conducting testing and certification in accordance with fs5100-307b. This process takes 18-24 months but is a requirement to be on their QPL (Quality Product List).

UL-162 SoyFoam™ TF-1122 Results

During independent testing evaluations, SoyFoam™ TF-1122 applied at 3 gallons per minute for five minutes resulted in extinguishment in 1.5 minutes. SoyFoam™ TF-1122 also passed both torch tests. SoyFoam™ TF-1122 held the burnback for 3 of the required 5 minutes. Our chemists are hard at work to ensure SoyFoam™ TF-1122 will achieve this final step in the 27-minute test with heptane non-polar solvent.

Frequently Asked Questions

1. What makes SoyFoam™ TF-1122 different from existing conventional foams?

SoyFoam™ TF-1122 is a wetting/smothering agent capable of extinguishing Class A and Class B fires, eliminating intentionally added PFAS chemicals. It contains no detectable fluorines (less than 1 part per billion) in the foam concentrate.

2. What types of fires does SoyFoam™ TF-1122 work on?

Class A (ordinary combustibles) and Class B (flammable liquids).

3. Does SoyFoam™ TF-1122 require changes in equipment, staffing, or apparatus inspections?

No. SoyFoam™ TF-1122 is compatible with existing foam inductors and aerating nozzles. It does not require changes in staffing or standard operating procedures (SOPs) for Class A and B fires, nor does it increase the need for apparatus inspections.

4. Does SoyFoam™ TF-1122 require changes in firefighting tactics?

No. Firefighting tactics and SOPs do not need to be changed when using SoyFoam™ TF-1122.

5. Does SoyFoam™ TF-1122 perform like conventional foam?

Yes. SoyFoam™ TF-1122 meets the four burn requirements for Class A and Class B fire extinguishments in accordance to NFPA 18 for standard for wetting agents.

6. Is SoyFoam™ TF-1122 as stable as conventional foam?

SoyFoam™ TF-1122 has a projected shelf life of 10 years.



“Firefighters nationwide have a 68% higher chance of getting cancer than any other regular human being* because of everything we’re exposed to. If I can eliminate one of those things, I’m all about that.”

-John Hejl, Chief of Casselton Fire Department, the first fire department in North Dakota to adopt SoyFoam™

Frequently Asked Questions

7. Does SoyFoam™ TF-1122 cost more?

SoyFoam™ TF-1122 is cost competitive to current foam solutions.

8. How can fire departments purchase SoyFoam™ TF-1122?

Cross Plains Solutions is working with third-party vendors for distribution, visit our website to find yours.

10. How does SoyFoam™ TF-1122 impact decontamination, out-of-service time, and cleaning costs?

Though SoyFoam™ TF-1122 is free of harmful PFAS chemicals, it's still recommended to follow current decontamination policies and procedures.

11. What delivery options are available for SoyFoam™ TF-1122?

It is available in 5-gallon pails, 55-gallon drums, and 250-gallon totes.

12. How does the product perform in extreme temperatures?

SoyFoam™ TF-1122 can be frozen, heated, and thawed and will still be fully functional.



Watch our video on how firefighters and farmers are teaming up on this **safer solution for communities and first responders**

Thank you for showing interest in SoyFoam™ biobased fluorine-free foams.

Cross Plains Solutions, supported by the United Soybean Board, has demonstrated SoyFoam™ across multiple states and fire departments. SoyFoam™ technology continues to be introduced nationwide through expos and collaborations.

For more information, visit crossplainssolutions.com or follow us on social media:

LinkedIn: Cross Plains Solutions

Facebook: Cross Plains Solutions

X: @CrossPlainsSoy

Alan Snipes

Managing Partner/CEO

Cross Plains Solutions, LLC

www.crossplainssolutions.com 385

Blackberry Way

Dalton, GA 30720

asnipes@crossplainssolutions.com

(706) 217-8400

Dave Garlie

Managing Partner/CTO

Cross Plains Solutions, LLC

www.crossplainssolutions.com N1703

950th St

Eau Claire, WI 54701

dgarlie@crossplainssolutions.com

(715) 271-4225



Because of the potential for biobased products to create new markets for soybeans, U.S. soybean farmers have invested millions of dollars to research, test, and promote piobased products. Much of this work was done through the United Soybean Board, which is composed of 77 U.S. soybean farmers appointed by the U.S. Secretary of Agriculture to invest soybean checkoff funds. As stipulated in the Soybean Promotion, Research and Consumer Information Act, USDA’s Agricultural Marketing Services has oversight responsibilities for the soybean checkoff.

The logo for US SOY features the letters "US" in a large, blue, stylized font, followed by the word "SOY" in a large, orange, sans-serif font.