FLAMBLOCKER
THE NEXT GENERATION GREEN FIRE EXTINGUISHERS

PROFESIONALNI VATROGASCI KARLOVAC

FLAMBLOCKER CF7

Operational Test Results — Forest & Wildfire

Karlovac, Croatia | 20 November 2025 | JVP Karlovac Fire Brigade

PFAS-FREE
100% Biodegradable
EU Compliant
Non-Toxic

KEY TEST RESULTS AT A GLANCE

728 L	5:06	-50%	NO
Total water volume used	Minutes to full extinguishment	Less water vs. standard	Fire restart (zero re-ignition)

TEST SETUP

Location	Karlovac, Croatia (former military site)
Date	20 November 2025
Start temperature	650°C+ (thermal camera max)
Fuel composition	Oak/pine logs + pallets + car tyres
Fire volume	3 × 3 × 2 m
Temp. after (ext.)	20°C
Temp. internal logs	180°C (no re-ignition observed)
CF7 mix rate	1% in waterline
Flow rate	130 L/min
Team	JVP Karlovac — 5-person crew

PERFORMANCE COMPARISON

Parameter	CF7 (1%)	Other[1]	Water only
Water volume (L)	**728**	1,500+	1,700+
Time (min)	**5:06**	12+	15+
Fire restart	**NO**	YES	YES
EU 2025/1988 compliant	**YES**	NO	YES
Emission reduction	**HIGH**	LOW	LOW
Soil/eco impact	**NONE**	HIGH	LOW
Biodegradable	**YES**	NO	YES
Impact on wildlife	**NONE**	YES	NO
Corrosive	**NO**	YES	NO
Toxic	**NO**	YES	NO

[1] Based on products currently available on the open market

PRODUCT PROFILE & CERTIFICATIONS

PFAS & Fluorine Free	100% Biodegradable (21 days)	Non-Toxic / Non-Corrosive	EU 2025/1988 Compliant	Food-grade ingredients (soy)

OPERATIONAL & TACTICAL ADVANTAGES

Firefighting & safety

- → 50%+ reduction in water use & deployment time
- → No fire restart — sustained post-deployment cooling
- → Pre-treatment of unburned vegetation as fire break
- → Protected internal escape corridors for crews
- → Direct personal protection for trapped firefighters
- → Shorter mop-up time after initial knockdown

Logistics & cost

- → No water tank cleaning required after use
- → No pump or pipework corrosion
- → Extended operational availability of the vehicle
- → Fewer water resupply runs (reduced logistics)
- → Lower total operational cost per incident
- → Immediately redeployable for drinking water delivery

Operational test Flamblocker CF7 Forest/Wildfire.

This document provides information on the executed operational tests of Flamblocker CF7 in relation to Forest Fires as performed on Thursday November 20th 2025 at the former military facility in Karlovac Croatia.

Attachments:
1. Full report on operational tests.
2. certificate 100% biodegradability (provided separately)
3. non-tox certification (provided separately)
4. CF7 Safety Data Sheet (SDS)

For the video report of this test, please visit https://www.flamblocker.com/flamblocker-cf7
Or visit the Flamblocker CF7 YouTube channel at https://www.youtube.com/watch?v=8KkwdgAeXcc

More detailed information about Flamblocker CF7 including Document of Conformity, REACH/CLP, SDS, Eco-Tox, 100% biodegradability and other important documents can be obtained via the Flamblocker website at www.flamblocker.com

Stakeholders for this document.
The document intends to provide data and information to governments, fire fighting teams and installers of fire fighting equipment and users of extinguishing liquids regarding the usage of Flamblocker CF7 as a fire fighting liquid/extinguishing agent/cooling agent for forest fires.

Conformity with EU legislation.
Flamblocker CF7 is a certified PFAS and Fluorine free extinguishing agent for class A-B-D-F and E as per EU directive Regulation (EU) 2025/1988 by adding entry 82 of annex XVII REACH (Regulation (EC) No 1907/2006).
Flamblocker CF7 holds official certificates underwriting the eco friendly status of the product.
Flamblocker CF7 holds official certificates stating that the product is non-toxic and non-corrosive and is 100% biodegradable.
The Flamblocker Safety data Sheet (SDS) shows no toxic or other dangerous markers and shows no need for any safety precautions when handling the product.

General observations and conclusions.
Flamblocker CF7 was tested on forest fire situations under operational conditions by professional fire fighters (JVP Karlovac). During the operational tests, Flamblocker has proven to be an equal or better alternative for existing fire extinguishing agents currently on the market as the required time and water volume needed per volume of burning forest was reduced by up to 50%.
In addition, the usage of Flamblocker CF7 and the characteristics of Flamblocker CF7 resulted in a minimum to zero effect on the environment and eco-system as the product is PFAS and Fluorine free and biodegradable. Flamblocker CF7 provides a high efficiency and environmental benefit to the users and the environment.
Large logs of wood have the tendency to remain hot internally after initial extinguishing of the initial open fire. The internal heat within the large logs is the main cause of a restart of a forest fire after several hours and are a common effect. The operational tests with CF7 has shown that, although the wooden logs were considerably hot inside, a restart did not occur in the hours after extinguishing, showing that, even though the initial deployed water has evaporated, the continues cooling effect of Flamblocker CF7 remains and prevents the restart of the fire.

Forest/Wild Fire	CF7	Other*[1]	Water
Water volume needed (litres)	**728**	1500+	1700+
Time needed (minutes)	**5.06**	12+	15+
Restart of fire	**NO**	YES	YES
Compliant with EU rules (EU) 2025/1988 entry 82 of annex XVII REACH	**YES**	NO	YES
Emission **reduction** (air pollution)	**HIGH**	LOW	LOW
Environmental impact (soil/eco systems)	**NON**	HIGH	LOW
Biodegradable	**YES**	NO	YES
Impact on wildlife	NON	YES	NO
Corrosive	NO	YES	NO
Toxic	NO	YES	NO

*1 based on current available products on the open market

Model/size of operational test.

Size of test:	3 x 3 x 2 meters volume.
Composition of test:	combination of large logs of pinewood and oak with added wooden furniture and wooden pallets (pinewood). (car tires added to increase heat development
Temperature of fire on start:	650C+
Temperature at end:	external 20C, internal 180C (within the large wooden oak and pine logs)
Time needed:	5 minutes and 6 seconds (5.06)
Total volume of water:	728 litres
Deployed mixing rate CF7:	1%

For more detailed report on the operational test, please see attachment 1 to this document.

Compliance with new EU legislation and National Legislation (HR/Si/BiH/SRB/MN/NM).

Flamblocker CF7 is fully compliant with the following rules and regulations as set forward by the European Union, relating to fire fighting liquids and foams.

Key legal acts / regulations

1. **Commission Regulation (EU) 2024/2462**
   This amends Annex XVII of REACH (Regulation (EC) No 1907/2006) to restrict the use of **PFHxA, its salts and PFHxA-related substances** (un-decafluorohexanoic acid) in certain applications, including firefighting liquids and foams. (EUR-Lex)
   — Full text (PDF) is available via EUR-Lex. (EUR-Lex)
   — It entered into force on **10 October 2024**. (EUR-Lex)
2. **Commission Regulation (EU) 2025/1988 (2 October 2025)**
   This amends Annex XVII to REACH, implementing a restriction on all PFAS in firefighting foams and liquids (the "PFAS in firefighting foams" restriction). (EUR-Lex)
   — Adds **Entry 82** to Annex XVII, stating that as of **23 October 2030**, firefighting foams and liquids with PFAS ≥ 1 mg/L (sum of all PFAS) shall not be placed on the market or used. (EUR-Lex)
   — Transitional / derogation rules are included for specific sectors (industrial, aviation, Seveso sites, etc.). (EUR-Lex)

Commission Delegated Regulation (EU) 2025/1399 (5 May 2025)
This amends Annex I of the POPs Regulation (EU) 2019/1021 to extend the temporal exemption for PFOA, its salts and related compounds in certain firefighting foam uses. (EUR-Lex)

Environmental impact Flamblocker CF7.
Flamblocker CF7 is certified eco-friendly and certified 100% biodegradable, is non-toxic and non-corrosive and is fully compliant with new EU regulations for PFAS in firefighting liquids and foams. As such, the product has a minimum ecological and environmental impact during deployment and after deployment.

Reduction of required water volume:
Flamblocker CF7 has a proven higher cooling capability, resulting in a shorter period of time needed to extinguish the forest fire which, in effect, reduces the volume of water needed to obtain the required result (extinguish the fire in full without restart risk).
The continues cooling effect assists in reducing the risk of internal heat from burning wood restarting a forest fire after the initial water has evaporated.

Result: Using Flamblocker CF7 reduces the required volume of water needed to extinguish a forest fire by up to 50% or more

Biodegradability:
Flamblocker CF7 is a certified 100% biodegradable extinguishing and cooling agent. Upon utilizing the product in forest and ecosystems, Flamblocker CF7 has a maximum degradability of 21 days after deployment, resulting in a 100% removal rate of the product in a forest or eco-system.

Result: Flamblocker CF7 has no impact on the environment or eco-system in which it is introduced or deployed. As the product is PFAS and Fluorine free, is 100% biodegradable and is non-toxic and non-corrosive, Flamblocker poses a similar or better alternative for regular fire extinguishing agents currently on the market.

Soil Contamination:
Flamblocker CF7 is made from food grade materials, including soja and is 100% biodegradable and is eco-friendly. CF7 is Non-toxic and Non-corrosive. As such, soil contamination caused by usage of CF7 is not present.

Result: usage of CF7 did not cause the need for soil remediation and did not impact the environment and/or ecology of the area

Air Pollution:
Flamblocker CF7 has a quick effect on the fire and, as such, contained the fire rapidly (5.06 minutes). By doing so, the time the fire was able to emit emissions from burning was reduced by over 50% compared to other extinguishing agents and more compared with just water. Due to the elongated cooling effect of CF7, a restart of the fire did not occur. Restart of forest and wild fires are common and pose a significant risk to fire fighters as the fire could restart behind them in the direct line of extraction.

Result: additional effort for containing the fire is avoided and additional emissions caused by the restart are avoided, reducing the overall emissions caused by the fire and reducing the operational deployment time for the fire fighting crew. In addition, a safer working environment is obtained for the fire fighting crew.

Compliance with EU regulations (PFAS and Fluorine).
Flamblocker CF7 is free of PFAS and Fluorine as per new EU directive (EU) 2025/1988 entry 82 of annex XVII (REACH), adopted by the EU on October 2th 2025. Due to the fact that CF7 is PFAS and Fluorine free, the short-term and long-term environmental impact caused by using

fire extinguishing agents is reduced to zero, leaving no effects on the ecology and environment.

Result: CF7 can be deployed in nature reserves, forests and other environmental sensitive areas as it has no influence or negative effects on the local ecology or environment.

Impact on wildlife.

Flamblocker CF7 is made from food grade materials including Soja and is 100% biodegradable and is eco friendly, non-toxic and non-corrosive. As such, wildlife will not be affected by the usage of Flamblocker CF7 and has no short-or-long-term negative impact on the wildlife.

Result: Flamblocker CF7 can be used in nature reserves, forest and other sensitive areas as it has no negative effect on the local wildlife.

Impact Flamblocker CF7 on human health and safety (including animals).

A Safety Data Sheet or SDS is a mandatory document stating the nature, composition and dangers of a product. The information on the SDS is the base-guideline for all safety measures for handling the product and transporting the product. Although the SDS is made by the manufacturer, providing false information on a SDS is liable and could result in legal procedures including prison time. As such, the information on the SDS is always leading compared to marketing claims made by manufacturers. Based on the SDS and certification for Eco-Tox, 100% biodegradability certification and the compliance of Flamblocker CF7, the following statements can be made;

Non-Toxic.

Flamblocker is certified Non-Toxic and this is backed by the mandatory Safety Data Sheet (SDS) and the Eco-Tox certification of Flamblocker CF7. The SDS shows no requirement for using any protection when using or transporting Flamblocker CF7.

Result: Flamblocker CF7 is easy to handle and causes no dangers to the users of the product, even when digested or when brought into contact with the eyes or lungs. In direct result of this situation, Flamblocker CF7 causes no danger to animals or insects due to its non-toxicity.

PFAS and Fluorine.

Flamblocker CF7 is free of PFAS and Fluorine and, as such, combined with the non-corrosiveness and non-toxicity, a safe product for fire fighters to handle. As CF7 is free of PFAS and free of Fluorine, there is no risk of a later development of illnesses such as cancer by the fire fighters that use the product.

Result: Flamblocker CF7 is a safe product to be handled on a continues base by fire fighters as it is free of PFAs and free of Fluorine and as such, has no risk of cancer development and can be handled by fire fighters without any additional protection. **Flamblocker CF7 is fully compliant with the new EU directives for firefighting liquids and foams.**

Operational and Tactical Advantages – Flamblocker CF7.

Reduction of time needed to extinguish a forest/wildfire

Flamblocker CF7 is both an extinguishing and a cooling agent. Through the combined effects of rapid flame knockdown and intensive temperature reduction of burning and preheated fuels, the required time to extinguish a forest or wildfire is reduced by over 50% compared to other available extinguishing agents on the market.

The rapid cooling effect reduces pyrolysis in fine and medium fuels, limits flame attachment to vegetation, and suppresses convective heat transfer to surrounding fuel beds.

This results in:

- Faster flame suppression
- Reduced rate of spread (ROS)
- Lower spotting potential
- Increased containment probability during initial attack

Result:

- Reduction of operational deployment time per incident and reduction of staff cost and operational hours on the fire engine.
- Reduction of time spent in operational dangerous areas for firefighters.
- Active reduction of re-ignition risk due to deep cooling of fuel layers.
- Reduction of required water volume during operations. Extension of availability of firefighting vehicles and/or ability to multi-deploy a vehicle on-site.

Creation of Preventive Fire Stoplines in Unburned Fuel.
Flamblocker CF7 can be proactively applied to unburned vegetation ahead of the advancing fire front. By pre-treating fuels in predicted fire spread corridors (based on wind direction, slope, and fuel load), a temporary chemically assisted fire stopline can be established without mechanical line construction.

The treated fuel area exhibits:

- Strong reduction in ignition probability
- Suppression of flame propagation across treated vegetation
- Significant reduction in heat release rate when exposed to flame contact
- Lower convective preheating of adjacent untreated fuels
- This tactic is particularly effective in scenarios involving:
- Wind shift risk
- Rapid head fire advancement
- Limited access for bulldozers or mechanical line construction
- Protection of assets or crew positions

When wind direction changes unexpectedly and pushes the head fire toward operational crews, the pre-treated zone acts as a buffer, slowing propagation and providing critical reaction time for repositioning or withdrawal.

Result:

- Active reduction of entrapment risk due to wind shift.
- Increased tactical control over fire behaviour.
- Enhanced crew survivability margin during volatile fire development.

Creation of Protected Internal Escape Corridors.
Flamblocker CF7 enables the tactical creation of protected movement corridors within or adjacent to the fire perimeter. By spraying CF7 in a controlled strip directly ahead and to the left and right of advancing firefighters, a treated safety corridor is established.
In the event of rapid fire behaviour escalation (e.g., blow-up conditions, spotting beyond control lines, sudden wind acceleration), the fire may continue to propagate through untreated fuels. However, the CF7-treated corridor remains significantly less receptive to flame spread and radiant heat transfer.

This creates:

- A viable internal egress path

- A survivable temperature corridor
- Reduced flame intensity along the treated strip
- Lower probability of flame engulfment

Unlike traditional escape routes that may become compromised by spotting or sudden flank runs, a CF7-treated corridor provides an internally reinforced safety pathway within the operational sector.

Result:

- Direct enhancement of firefighter escape capability.
- Reduction of fatality and serious injury risk during entrapment scenarios.
- Increased confidence for line crews operating in dynamic fire environments.

Protection for Firefighters When Enclosed/Trapped.

Flamblocker CF7 is already used as a personal protection product for riot police and firefighters. During deployment at a forest or wildfire, entrapment situations are high-risk and occur with little warning.

CF7 can be applied directly to firefighters as an emergency protective measure. Due to its extreme cooling capacity and thermal buffering effect, application of pure CF7 provides temporary thermal protection, allowing firefighters to pass through flame zones or radiant heat exposure areas to reach safety.

The product reduces surface temperature exposure and delays heat transfer to personal protective equipment (PPE), increasing survivability time in critical conditions.

Result:

- Availability of CF7 as a personal protection measure reduces the risk of severe burns or fatal injury.
- Direct operational risk reduction regarding potential loss of human life.

Reduction of Re-Ignition and Mop-Up Time.

Due to its deep cooling effect and penetration into organic fuel layers, Flamblocker CF7 reduces the likelihood of smoldering re-ignition in root systems, peat layers, and compacted organic debris.

By lowering residual heat below re-ignition thresholds:

- Mop-up operations are shortened
- Night flare-ups are reduced
- Need for repeated patrol cycles is minimized

Result:

- Lower long-term crew exposure in hazardous post-front conditions.
- Reduced probability of secondary fire growth after initial containment.

Reduction of Required Water Volume.

The enhanced extinguishing efficiency of CF7 reduces overall water demand. This is operationally critical in rural and remote wildfire incidents where water logistics are often the limiting factor.

Reduced water dependency results in:

- Fewer refill cycles

- Less shuttle operation time
- Lower mechanical stress on pumps
- Increased sustained attack duration

Result:

- Improved operational continuity.
- Lower logistical vulnerability.
- Reduced environmental impact due to minimized water extraction.

Prevention of Corrosion and Clogging on Pump Systems.
Flamblocker CF7 is a non-corrosive product (underwritten by certificates) and does not cause clogging in pumps or pipelines within firefighting vehicles or water lines. The use of CF7 does not result in mechanical damage or residue buildup in pumps, internal waterlines, or external hose systems.

Result:

- Reduction of downtime.
- Avoidance of repair costs associated with corrosive or residue-forming agents.
- Higher operational readiness rate of the fleet.

No Flushing or Cleaning of Main Water Storage.
Many alternative firefighting agents contain PFAS, fluorine compounds, or other toxic components and are often not biodegradable. After their use, fire truck water tanks require time-consuming cleaning to avoid contamination.
Flamblocker CF7 is non-toxic, non-corrosive, certified biodegradable, eco-friendly, and free of PFAS and fluorine. It is produced from food-grade materials and is not harmful to human or animal life. Therefore, after deployment using CF7, the main water tank does not require purification before being used for water transport to citizens or livestock.

Result:

- No contamination risk of main water tanks.
- Immediate redeployment capability for water supply missions.
- No secondary health risk to humans or animals.

Reduction of Cost.
Because Flamblocker CF7 requires less water and provides higher extinguishing efficiency, the total volume of agent required per incident is reduced.

This results in:

- Lower agent consumption per operational hour
- Reduced water transport cost
- Reduced labour hours per incident

Result:

- Continuous operational cost reduction while increasing efficiency and safety margins.

Overall Operational Safety Impact.
When integrating:

- Faster knockdown
- Reduced rate of spread
- Proactive stopline creation
- Protected internal escape corridors
- Lower re-ignition probability
- Reduced water logistics dependency
- Personal emergency protection capability

Flamblocker CF7 does not merely function as an extinguishing agent, but as a tactical risk mitigation tool.

The cumulative effect is:

- Increased decision-making flexibility for incident commanders
- Expanded tactical options during volatile fire behaviour
- Reduced exposure time for crews
- Increased survivability margins

Conclusion:
Flamblocker CF7 contributes directly to the creation of a safer working environment for firefighters by combining extinguishing performance with active operational risk reduction.

Attachement 1: Report Forest Fire Test Karlovac tests November 20th 2025.

Goal of test:
To show how CF7 reacts on larger wood fires.
To show the quick results of deploying Flamblocker CF7 onto a hot and condense wood structure consisting of large tries trucks, pallets and small wood materials including hay.
A combined test with ground vegetation (firestop) was not possible due to heavy rain and no ability to obtain dry materials. Hay was obtained and deployed but was very wet and as such could not perform as required)
To demonstrate the efficiency of CF7 on forest fires and to show the reduction of required water/time and show continues cooling of area by CF7 and to show the cooling effects of Flamblocker CF7 after deployment for a prolonged period of time, resulting in no restart of the forest fire.

Test situation.

- Test day: Thursday November 20th 2025.
- Weather conditions: cold weather (8C) with spells of rain during the preparation of test.
- During test it was dry.
- Wind: Mild wind 4Bf.
- Condition of trees/logs: Used trees/logs were wet.
- Used accelerator materials were dry.
- Accelerant used: Benzine and diesel used to start fire (about 5 litres total)
- Thermal camera: Used thermal camera had a limitation on temperature. Max readable temperature was 650+
- Type of fire truck and system: Standard fire truck with standard waterline and standard nozzle with added additive mixing module able to dispense between 1 and 6% additive during deployment.
- Water volume truck/hose: 130 litres flow per minute.
- Mixing rate CF7: Flamblocker CF7 mixing rate = 1%
- Total time required to take out fire/complete control: 5.06 (five minutes and six seconds)
- Total required water volume: 728 litres
- Deployed fire fighting team: Vatrogasci Karlovac (JVP Karlovac) with a 5 member team

Construction of fire.
Multiple larger trees and tree trunks without top vegetation were stacked into large pile.
Multiple wooden furniture items and wooden pallets were added to create an intense heat situation and to assist the full combustion of the used wood/trees. The wood components were multi layered to create maximum heat and difficulty. Wood was set afire at 08.20 and actual test committed at 10.15.

The test.
The pile of wood was set on fire at 08.20 to enable the built-up of internal heat and ensure the logs were fully ablaze. Upon starting the actual test at 10.15, the internal temperature exceeded 650C (max readable temp at thermal camera). A standard fire truck with a single c-line hose was deployed. The hose was fitted with a water gun/nozzle model that is able to do spray and single direct water blast. The water gun had a factory fitted additive dispenser that is able to mix additive between 1 and 6%. During the tests, both the spray as well as the direct waterline deployment of the water

gun/nozzle was deployed. The fire was attacked with a 1% mixing rate and team attacked with 1 single waterline circling the fire multiple times.
Upon obtaining full control and extinguishing the fire, the remaining heat inside the logs was still 100C+ but no visible fires/flames were present, only internal smouldering of the large trees/logs.
Due to the adding of the hay, the stack continued smoking heavily.
The outer areas of the fire had a continues temperature of 20C after completion of the deployment.

In the hours after extinguishing the fire, the logs were still warm but the fire did not restart and died out during the day even though the fire stack was not opened/dismantled.

Total time needed to obtain full control/extinguish fire: 5.06 minutes.
Total water volume required: 728 litres

Observed results.
Flamblocker CF7 enabled a quick and efficient extinguishing of the large and multi layer woodfire.
The internal smouldering continued as the wood stack was not dismantled but the fire did not restart and died out in several hours.
No restart of fire. Flamblocker CF7 showed it is able to provide continuous cooling after deployment.
Due to adding of Flamblocker CF7, the required water volume and required time to attack the fire was reduced dramatically and a restart of the fire (common on forest fires after regular water deployment) did not occur.
With the reduction of the required water volume, the operational deployment time of the fire truck (e.g. the amount of water available versus the volume needed) was improved with over 50% compared to regular deployment during forest fire situations.

Please note that the used method of attacking a fire was a regular model. When using Flamblocker CF7, regular methods of attack can be adjusted to short burst attacks, reducing the required water volume and required time by half of the current used time and water volume. The standard attack model was used to obtain primary understanding of the results so to enable comparison to old situations.

Gratitude and acknowledgement.
Flamblocker and its partners wishes to extant gratitude and respect to the Karlovac fire rescue team (JVP Karlovac) for enabling this test and their support.

This test was witnessed by the following parties/entities:
JVP Karlovac Firefighting team
KL Protektion d.o.o. https://www.klprotektion.hr/
Croatian specialist company for firefighting equipment
LiveSafe d.o.o. https://livesafe.si
Slovenian specialist company for firefighting equipment
FireTrade d.o.o. https://firetrade-bh.com/
Bosnian specialist company for firefighting equipment
Representatives of the North-Macedonia Department of Crisis Management, Protection and Rescue
Various representatives of fire fighting teams from Croatia
Mr. Zlatko Goykov,
strategic advisor
Manuela Zakula mag. ing. sec. Karlovac University of Applied Sciences
https://www.vuka.hr/sigurnost/en/manuela.zakula
Department of Safety and Protection

all shown witnesses underwrite the results and outcome as described in this document.







Attachment 4: Safety Data Sheet (SDS) Flamblocker CF7.

SAFETY DATA SHEET

Compliant with: Regulation (EC) Nr. 1907/2006 (REACH), Regulation (EC) Nr. 1272/2008 (EU-GHS, CLP)

CF7 – all-purpose wetting agent

Revised: February 6th, 2026.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Product name:
Flamblocker CF7 – All-purpose wetting agent
Product description:
Colourless liquid
Other means of identification:
HS Code: 38130000
1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses:
Non-hazardous fire extinguishing agent.
Used to hinder temperature increase, prevent ignition and re-ignition of fire, reduce smoke development, and improve dispersion of extinguishing media.
Suitable for application on fire classes **A, B, F, and D**, Li-ion Batteries and for use as a fat and grease cleaner.
Dilution with water (typical use concentrations):

- Fire class A: 1–3 %
- Fire class B: 3–6 %
- Fire class F / D: up to 12 %

Uses advised against:
Use outside the recommended dilution ranges or for applications not consistent with the specified fire classes.
1.3 Details of the supplier of the safety data sheet
Supplier / Responsible party (global distribution):
Flamblocker BV
Brandpunt 32
1705 SK Heerhugowaard
The Netherlands
Telephone (responsible person):
+31 6 288 47 131 (Mr. Martijn Beerthuizen)
Email (competent person responsible for the SDS):
info@flamblocker.com
Website:
www.flamblocker.com
Manufacturer:
C-Fire NV
Frank Van Dyckelaan 3

9140 Temse
Belgium
Telephone:
+32 3 710 69 01
Email:
info@c-fire.eu
Website:
www.c-fire.eu
1.4 Emergency telephone number
Emergency telephone number (chemical emergency advice):
+31 6 288 47 131 (Mr. Martijn Beerthuizen, Flamblocker BV)
Availability:
24 hours / 7 days

SECTION 2: HAZARD IDENTIFICATION

2..1 Classification of the substance or mixture
This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures. However, a safety data sheet is being supplied for it upon request of distributors.
2..2 Label elements
No hazards or precautionary statements applicable.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances
Not applicable.
3.2 Mixtures
Water-based solution of plant extracts and alkali-salts of inorganic acids;
No dangerous substances, no foams, no afff.
No PBT, PFAS, PFOS and PFOA. No vPvB substances. Fluorine free.

SECTION 4: FIRST AID MEASURES

Inhalation: no harm
Skin contact: wash affected area with soap and water
Eyes: remove contact lenses. Flush eyes with clear running water while holding eye lids open.
Ingestion: non-toxic, if swallowed (by large quantities) do not induce vomiting, seek medical advice immediately.

SECTION 5: FIRE FIGHTING MEASURES SECTION

General hazards: no danger of fire, product itself is fire extinguishing agent.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Action to be taken in case of, material is being released or spilled: flush area with water.

SECTION 7: HANDLING AND STORAGE

Precautions to be taken in handling and storage: protect from extreme temperatures to keep strength of solution
Shelf life: not limited.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure control: none required
Personal protection: practice safe workplace habits
Respiratory protection (specify type): none required
Protective gloves: none required
Eye protection: none required
Other protective clothing or equipment: none required
Work / hygienic practices: practice safe workplace habits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear liquid,
Odor: Slightly fresh smell
pH (20°C): 7,5 - 7,8
Melting point : similar to water, not determined
Freezing point: -30°C
Initial boiling point and boiling range: similar to water, not determined
Relative density: 1,02
Solubility in water: 100% , water solution
Kinetic Viscosity (20°C) : 72,42 mm2/s
Refractive Index (20°C) : 1.37582 (nD)

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: no known reactions
10.2 Chemical stability: Under storage at normal ambient temperatures (to keep strength of solution), the product is stable.
10.3 Possibility of hazardous reactions: No hazardous reaction when handled and stored according to provisions
10.4 Conditions to avoid: extreme temperatures (to keep strength of solution)
10.5 Incompatible materials: not known
10.6 Hazardous decomposition products: no known hazardous decomposition products

SECTION 11: TOXICOLOGICAL INFORMATION

Not known any toxicological (health) effects
No PBT, PFAS, PFOS and PFOA. No vPvB substances. Fluorine free.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
Testing of acute toxicity on green algae (Raphidocelis subcapitata):
ErC_{50}, 72 h, 57 mg L^{-1}, not acute toxic to that aquatic organisms
Testing of acute toxicity on Daphnia magna Straus (Cladocera, Crustacea):
EC_{50}, 48 sati, > 1000 mg L^{-1}, not acute toxic to that aquatic organisms
Testing of inhibition of grow of active-mud-microorganisms:
EC_{50} > 1000 mg L^{-1}, not acute toxic to that organisms
No PBT, PFAS, PFOS and PFOA. No vPvB substances. Fluorine free.
12.2 Persistence and degradability
Abiotic Degradation: Not determined
Physical- and photo-chemical elimination: Not determined
Biodegradability (21 days): 100,0 %; testing method according to EN ISO 9439:2000 (Daphnia magna)

12.3 Bioaccumulative potential
Not determined
12.4 Mobility in soil
Not determined
12.5 Results of PBT and vPvB assessment
CF 7 - all purpose wetting agent is rapid 100% biodegradable mixture with no PBT (Persistence, Bioaccumulation, Toxicity) and no vPvB substances.
100% biodegradable.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Not considered as a hazardous waste. Dispose after diluting with water.
No PBT, PFAS, PFOS and PFOA. No vPvB substances.

SECTION 14: TRANSPORT INFORMATION

CF 7 – all-purpose wetting agent is not labeled as hazardous material. (100% biodegradable)
No restriction for transportation of product.
Customs Commodity Code (HS code): 38130000
EAN Code: 5407008000288

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or Mixture Not known any specific regulation, 100% biodegradable
15.2 Chemical Safety Assessment:
No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION

Disclaimer:
This SDS is to the best of our knowledge and belief, accurate and reliable as of the date compiled. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

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