

TECHNICAL SUMMARY SHEET

Flamblocker CF7

Fire Suppression & Cooling Liquid Additive – Technical Summary

Product Overview

Flamblocker CF7 is a water-based fire suppression and cooling additive designed for professional firefighting applications. The product is applied in combination with water and delivers enhanced and prolonged cooling, significantly reducing fire temperature and preventing re-ignition.

- Liquid additive – not a foam, does not generate foam
- Fully water-soluble and compatible with standard firefighting systems
- Designed for operational deployment by professional fire services

Fire Class Applicability

CF7 is suitable for use across multiple fire classes:

- **Class A** – Solid materials (wood, paper, textiles)
- **Class B** – Flammable liquids (fuel, oil, chemicals)
- **Class D (application-dependent)** – Metal-related fire risks and lithium-ion battery environments
- **Class F** – Cooking oils and fats
- **Class E** – Energised electrical equipment

Recommended Mixing Ratios (Operational Guidance)

Application / Fire Type	Typical Mixing Ratio
Forest / Wildfire (Class A)	1 – 3 %
Structural fires (residential / commercial)	3 – 6 %
Flammable liquids / fuel fires (Class B)	6 – 10 %
Industrial / waste / plastics / tyres	2 – 10 %
Electrical installations	2 – 10 %
Lithium-ion batteries / EV fires	6 – 12 %
Landfills / large waste storage	3 – 10 %

CF7 is flexible in application and can be used between 1% and 10% (up to 12% for high-risk scenarios) depending on operational conditions.

Operational Benefits

1. Extreme Cooling Performance

- Rapid heat absorption reduces fire temperature quickly
- Continues cooling after water evaporation

2. Re-Ignition Prevention

- Active agent remains on treated surfaces
- Reduces residual heat and prevents fire restart

3. Reduced Water Consumption

- More efficient heat removal compared to water alone
- Less need for continuous or repeated application

4. Faster Fire Control

- Improved knockdown time
- Better penetration into deep-seated fires

5. Operational Efficiency

- Focus on targeted application, not volume
- Typically fewer application cycles required

Deployment & Compatibility

CF7 is designed for direct integration into existing firefighting operations:

- Compatible with:
 - Fire trucks and onboard tanks
 - Standard hoses and nozzles (C/D lines)
 - Water-mist systems
 - Inline proportioning systems
- Deployment options:
 - Direct mixing in fire truck tank
 - Inline eductors / proportioners
 - Nozzle-mounted agent systems
- Operational flexibility:
 - Works at **any standard pressure range**
 - No specialised equipment required

Firefighting Principle (Cooling-Based Approach)

Traditional firefighting:

- Cooling stops when water evaporates
- Requires continuous application

Flamblocker CF7 approach:

- Water acts as carrier
- CF7 remains active after evaporation
- Continues absorbing heat and stabilising the fire

Result:

- Improved thermal control
- Reduced re-ignition risk
- Higher overall suppression efficiency

Environmental & Safety Profile

- **PFAS-free and fluorine-free**
- **100% biodegradable** (OECD compliant)
- **Non-toxic and non-corrosive**
- No hazardous classification under CLP
- No harmful impact on:
 - Soil
 - Water
 - Flora and fauna

Key Technical Characteristics

- Appearance: Colourless / transparent liquid
- Solubility: Fully water-soluble
- pH: Neutral (~7)
- Viscosity: Comparable to water
- Shelf life: Unlimited (when stored correctly)

Operational Impact Summary

Conventional Water

Flamblocker CF7

Cooling stops after evaporation Cooling continues after application

Requires high water volumes Reduced water consumption

Repeated application needed Typically single effective application

Surface-level effect Deep cooling and heat removal

Conclusion

Flamblocker CF7 provides a modern, cooling-based firefighting solution that enhances operational efficiency, improves safety, and aligns with current environmental regulations.

The product is specifically designed to support professional firefighting services in addressing complex fire scenarios, including lithium-ion battery fires, waste facilities, and high-heat industrial environments.

USE-CASE SHEET – OPERATIONAL APPLICATIONS

Flamblocker CF7 – Fire Suppression & Cooling Liquid Additive

Operational Use Cases for Professional Firefighting

Flamblocker CF7 is specifically designed for high-risk, high-temperature fire scenarios where conventional water-based firefighting methods are insufficient due to deep-seated heat and re-ignition risk.

1. Lithium-Ion Battery & EV Fires

Operational Challenge

- Extremely high internal temperatures
- Thermal runaway (chain reaction)
- Continuous re-ignition risk
- Difficult to cool internally using water alone

CF7 Operational Approach

- Applied with water as carrier (6–12% typical range)
- Rapid external cooling combined with **deep heat absorption**
- CF7 remains active after water evaporation
- Interrupts thermal feedback loop

Operational Benefits

- Faster temperature reduction
- Reduced risk of thermal runaway continuation
- Improved control over re-ignition
- Reduced water consumption compared to prolonged cooling strategies

Typical Applications

- Electric vehicles (EVs)
- Battery storage systems (BESS)
- Charging infrastructure
- Industrial lithium-ion storage

2. Landfills, Waste Facilities & RDF/SRF Fires

Operational Challenge

- Deep-seated fires within waste layers
- Long-duration smouldering combustion
- High re-ignition frequency
- Difficult penetration with water

CF7 Operational Approach

- Applied at 3–10% depending on waste composition
- Water distributes CF7 into waste structure
- CF7 continues cooling after water runoff/evaporation
- Penetrates and stabilises hot zones

Operational Benefits

- Improved penetration into waste mass
- Reduced need for continuous water application
- Faster stabilisation of fire zones
- Lower operational time and resource demand

Typical Applications

- Municipal Solid Waste (MSW) facilities
- Recycling plants (plastics, RDF/SRF)
- Landfills and waste storage areas
- Scrap and bulk material storage

3. Wildfires & Forest Fires

Operational Challenge

- Rapid fire spread
- High heat load in vegetation
- Re-ignition from residual heat
- Limited water availability in remote areas

CF7 Operational Approach

- Applied at 1–3% for large-area coverage
- Water used as distribution medium
- CF7 enhances cooling and heat suppression on vegetation
- Remains active on treated surfaces

Operational Benefits

- Improved cooling efficiency vs water alone
- Reduced water usage (critical in remote areas)
- Increased control of fire spread
- Reduced re-ignition risk in treated zones

Typical Applications

- Forest fires
- Wildland–urban interface (WUI) zones
- Vegetation fires
- Exposure protection (structures, infrastructure)

Core Operational Principle (All Use Cases)

Flamblocker CF7 applies a cooling-based firefighting method:

- Water = carrier and initial cooling
- CF7 = long-lasting heat absorption agent

Unlike water:

- Cooling does not stop after evaporation
- Residual heat is actively reduced
- Fire re-ignition risk is significantly lowered

Operational Impact Summary

Challenge	Conventional Water	Flamblocker CF7
Deep heat	Limited	High penetration
Re-ignition	Frequent	Significantly reduced
Water demand	High	Reduced
Application	Continuous	Targeted
Fire stability	Variable	Improved

Conclusion

Flamblocker CF7 enables more effective, controlled, and efficient firefighting operations in complex fire scenarios by combining:

- Rapid cooling
- Prolonged heat suppression
- Reduced resource consumption
- Improved safety and control