



# PC-Fire® AFFF

3% FOAM CONCENTRATE

## Description

AFFF foam concentrates are designed for rapid fire knockdown by producing a thin aqueous film which spreads across the surface of the fuel, separating the fuel from oxygen. This is accomplished by allowing the foam solution to quickly drain from the foam bubble which in turn, affects long term sealability and burnback resistance.

The aqueous film is produced by the fluorocarbon surfactant (i.e. PFAS) reducing the surface tension of the foam solution to a point where the solution can be supported by the surface tension of the fuel. The effectiveness of the aqueous film is directly influenced by the surface tension of the fuel. The film tends to be more effective on fuels with higher surface tension such as diesel and jet fuels, and less effective on fuels with lower surface tension such as hexane and gasoline.

PC-Fire® AFFF foam concentrate utilizes three suppressions:

1. The foam blanket blocks oxygen supply to the fuel.
2. Liquid drains from the foam blanket and forms an aqueous film that suppresses fuel vapor and seals the fuel surface.
3. The water content of the foam solution produces a cooling effect for additional fire suppression.

### TYPICAL PHYSIOCHEMICAL PROPERTIES At 70 °F (20 °C)

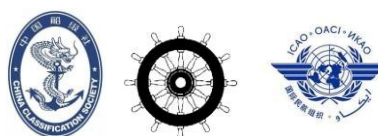
Appearance	Light yellow liquid
PH value	6.0- 9.5
Specific gravity	1.021/1.035±0.01g/ml
Freezing point	- 6°C (adjustable)
Surface tension(mN/m)	20 ± 10%
Interfacial tension(mN/m)	2 ± 1.0
Viscosity (Mp.s)	2.5
Diffusivity (mN/m)	4.9
Corrosion rate	Q235A Steel: 7
(mg/(d*dm <sup>2</sup> ))	3A21 Aluminum: 6.0
Foam expansion (20°C)	8.9±1.0 or 20%
25% Drainage time (20°C)	2.5 ( 1±20%) min
Extinguishing time	≤3 min
Fire-resistance time	≥15.0 min



## Approvals, Listings, and Standards

PC-Fire® AFFF is designed in GB15308-2006 (foam extinguishing agent), CNCA-C18-03:2014 (mandatory product certification implementation Rules fire extinguishing equipment products), CCF-MHISB-05 (Mandatory product certification implementation rules fire extinguishing equipment products fire extinguishing agent products) design. The concentrate is approved, listed, qualified under, or meets the requirements of the following specifications and standards:

- ✓ CCC (China Compulsory Product Certification)
- ✓ EN 1568-3 (CE standards)
- ✓ CCS (China Classification Society, Standards: MSC.1/Circ.1312)
- ✓ RINA (Registo Italiano Navade-MED 3.5)
- ✓ ICAO Level B (International Civil Aviation Organization) by CNPP.



## Application

PC-Fire® AFFF is used at 3% concentration in fire suppression systems and manually to fight fires involving hydrocarbon fuels such as crude oil, gasoline, and fuel oils. It is not suitable for use on polar solvents or water miscible fuels such as alcohols, ketones, esters, and ethers. Typical installations include foam water sprinkler systems, aircraft hangars, loading racks, process areas, etc.

PC-Fire® AFFF Concentrate may be used for general fixed, semi-fixed, and emergency response firefighting applications.

- ✓ Oilfield, oil depots, petroleum refineries, large chemical plant;
- ✓ The large oil tank by subsurface-injection;
- ✓ Truck/rail loading or unloading facilities;
- ✓ Docks/marine tankers;
- ✓ Aircraft Rescue, aircraft hangars, helidecks, and terminals;
- ✓ Mobile emergency response equipment
- ✓ As a wetting agent in combating fires in Class A materials such as wood, paper, and types.

## Proportioning

PC-Fire® AFFF 3% is intended for use at 3% (3 parts concentrate to 94 parts water).

## Equipment

PC-Fire® AFFF 3% is readily proportioned using conventional foam proportioning equipment such as portable and fixed (in-line) foam venturi proportioners, handline nozzles/branch pipes with pick-up tubes, balanced pressure variable flow proportioners, balanced pressure bladder tank proportioners, and around- the-pump proportioners.

PC-Fire® AFFF 3% can be used with air aspirating discharge devices such as low expansion branch pipes, monitors, top pourer sets, rim seal foam pourers, foam/ water sprinklers, and base (sub-surface) injection systems.

PC-Fire® AFFF 3% can be used with non- aspirating discharge devices such as spray/fog branch pipes and nozzles, monitors, and spray/fog sprinklers.

However, non-aspirated application is not recommended as the primary method of attack for major fires where a stable foam cover is essential.

PC-Fire® AFFF 3% is suitable for use in combination with foam compatible dry chemical extinguishing agents.

## Compatibility

PC-Fire® AFFF is suitable for use in combination with:

- ✓ Soft or hard, fresh, brackish or sea water.  
(Usually, we offer two kinds of model.
    - 1, Fresh-water type which suitable with soft, fresh water.
    - 2, Sea-water type which suitable with soft or hard, fresh, brackish or sea water.)Kindly contact our sales term and confirm which one is better for you.
  - ✓ Dry powder extinguishing agents either separately or as twin agent systems.
  - ✓ Expanded protein-based or synthetic foam for a fire in sequence or simultaneously;
- If other questions, please contact our sales term.

## Corrosion

PC-Fire® AFFF 3% AFFF Concentrate meets the corrosion requirements with cold rolled carbon steel (Q235A: ≤15d\*dm2), Aluminum (3A21 ≤15) by GB15308-2006.

To help avoid corrosion, galvanized pipe and fittings should never be used in contact with undiluted PC-Fire® AFFF Foam Concentrate.

## Storage and Handling

PC-Fire® AFFF 3% is ideally stored in its original shipping container or in tanks or other containers which have been designed for such foam storage. Recommended construction materials are stainless steel, high-density cross-linked polyethylene, or reinforced fiberglass polyester (isophthalic polyester resin) with a vinyl ester resin internal layer coating.

Recommend sealed storage. Foam concentrates are subject to evaporation which accelerates when the product is exposed to air. Storage tanks should be sealed and fitted with a pressure vacuum vent to prevent free exchange of air. Use of Seal Oil is only recommended in stationary storage tanks.

It is recommended that PC-Fire® AFFF 3% not be mixed with any other type of foam concentrate in long term storage. Such mixing could lead to chemical changes in the product and a possible reduction in or loss of firefighting capability. Most expanded foams are compatible for side- by-side application during an incident.

The product should be maintained within the recommend temperature range. Prevent exposure. If the concentrate freezes during transport or storage, full product serviceability can be restored upon thaw with gentle re-mixing.

Recommended storage temperature:

Maximum continuous storage temperature: 49°C (120°F)

Maximum intermittent storage temperature: 60°C (140°F)

Minimum continuous storage temperature: -6°C (21.2°F)

We can also offer ultra-low temperature models for special customers. Please contact our sales team to customize your cryogenic foam.

Factors affecting the foam concentrate's long-term effectiveness include temperature exposure and cycling, storage container characteristics, air exposure, evaporation, dilution, and contamination.

The effective life can be maximized more than 8 years through optimal storage conditions and proper handling.

## Inspection

When the foam is stored in strict accordance with "Storage and Handling", the product will not deteriorate in general. An annual inspection and sample analysis is typically sufficient, unless the product has been exposed to unusual conditions.

Customers can also sample the foam and send it to us to check its effectiveness. If the quantity of order is more than 10,000L, we will automatically retain the sample when shipping. If the customer needs testing, we can test the validity of foam for the customer from the retention sample.

## Environmental and Toxicological

Please refer to the product's Material Safety Data Sheet (MSDS) and website for more information regarding the use, discharge and disposal of all firefighting foam products.

We also can supply separately the environmentally-mindful PC-WC FIRE C-6 3% AFFF Concentrate formulation which contains short-chain, C-6 fluorochemicals manufactured using a telomer-based process. The telomer process produces no PFOS, and these C-6 materials do not breakdown to yield PFOA. The fluorochemicals used in the concentrate meet the goals of the China 2010/15 PFOA Stewardship Program.

But we still recommend that prevent the foam concentrate and foam solution from entering ground water, surface water, or storm drains. Discharge and disposal should be made in accordance with local regulations.

Results of tests for acute oral toxicity and primary skin irritation have proved negative. Repeated skin contact will remove oils from the skin and cause dryness. The foam concentrates and foam solution is a primary eye irritant, and contact with the eyes should be avoided. Users are advised to wear protective equipment. If it enters the eyes, flush them well with water and seek immediate medical attention. For further details, see the Material Safety Data Sheet.

## Quality Assurance

PC-Fire® AFFF Foam Concentrate is subject to stringent quality controls throughout production, from incoming raw materials inspection to finished product testing, and is manufactured in an ISO 9001:2015, ISO 14001:2015 and ISO45001: 2018 certified facility.



## Typical Packing Specification

Container	Dimensions (mm)	Shipping weight (kg)
25L	300*250*430	27.5
6 US gallons		
200L	590*590*930	212
52 US gallons		
1000L	1200*1000*1150	1083
264 US gallons		

For more detailed shipping information, please contact the sales team to obtain the document "PACKAGE OF PC-Fire® AFFF FOAM CONCENTRATE".

TECHNICAL DATA SHEET UPDATED IN  
SEPTEMBER 2020  
TDS/ PC-Fire® AFFF /20

All technical data in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

The information, particularly the recommendations relating to the application and end-use of PC-WC products, are given in good faith based on PC-WC's current knowledge and experience of the products when properly stored, handled and applied under normal conditions by PC-WC recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or any other advice offered. The user must test the product's suitability for the intended application and purpose. PC-WC Global FZ-LLC reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Our technical assistance is at the disposal of the users. Consult the latest update of the technical data sheet on our website [www.pc-wc.com](http://www.pc-wc.com)



### PC-WC GLOBAL FZ-LLC

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