

CHEMGUARD C3B 3% AFFF Concentrate

Description

CHEMGUARD C3B 3% AFFF (Aqueous Film-Forming Foam) Concentrate combines fluoro- and hydrocarbon-surfactant technologies to provide superior fire and vapor suppression for Class B hydrocarbon fuel fires. This synthetic foam concentrate is intended for firefighting applications at 3% solution in fresh, salt, or hard water.

CHEMGUARD C3B foam solution utilizes three suppression mechanisms intended for rapid fire knockdown and superior burnback resistance:

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

TYPICAL PHYSIOCHEMICAL PROPERTIES

Appearance	Pale yellow liquid
Density	1.01 ± 0.02 g/ml
pH	7.0 – 8.5
Refractive Index	1.3480 minimum
Viscosity*	2 ± 1 cSt at 77 °F (25 °C)
Viscosity*	3 ± 1 cSt at 35 °F (2 °C)
Spreading Coefficient	3 dynes/cm minimum at 3% dilution
Pour Point	29 °F (–2 °C)
Freeze Point	25 °F (–4 °C)

*Cannon-Fenske viscometer.

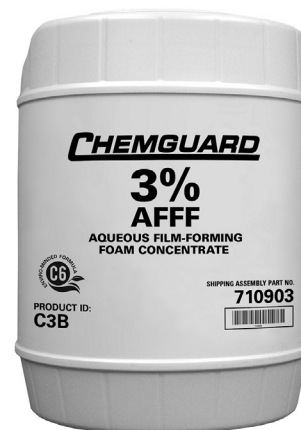
Application

CHEMGUARD C3B 3% AFFF Concentrate is intended for use on Class B hydrocarbon fuel fires with low water solubility, such as crude oils, gasolines, diesel fuels, and aviation fuels. It is not suitable for use on polar fuels with appreciable water solubility, such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone.

The concentrate also has excellent wetting properties that can effectively combat Class A fires. It may also be used in conjunction with dry chemical agents to provide even greater fire suppression performance.

CHEMGUARD C3B Concentrate can be ideal for fixed, semi-fixed, and emergency response firefighting applications such as:

- Fuel or chemical storage tanks
- Industrial chemical and petroleum processing facilities
- Truck/rail loading and unloading facilities
- Flammable liquid containment areas
- Aircraft hangars
- Mobile equipment



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Approvals, Listings, and Standards

CHEMGUARD C3B 3% AFFF Concentrate is designed in accordance with National Fire Protection Association (NFPA) Standard 11 for Low-, Medium-, and High-Expansion foam. The concentrate is approved, listed, qualified under, or meets the requirements of the following specifications and standards:

- **UL Standard 162, Foam Liquid Concentrates**
 - UL Listed for use with an extensive array of proportioning and discharge equipment, including sprinklers as required by NFPA 16
- **ULC S564, Category 1 Foam Liquid Concentrate**
- **FM Approvals - FM 5130**
 - This concentrate is only FM Approved in conjunction with the specific proportioning equipment and discharge devices as shown in the Approval Guide (www.ApprovalGuide.com)



The environmentally-mindful CHEMGUARD C3B 3% AFFF Concentrate formulation 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 U.S. Environmental Protection Agency 2010/15 PFOA Stewardship Program.



Foaming Properties

CHEMGUARD C3B 3% AFFF Concentrate may be effectively applied using most conventional foam discharge equipment at 3% dilution with fresh, salt, or hard water. For optimum performance, water hardness should not exceed 500 ppm expressed as calcium and magnesium.

CHEMGUARD C3B Concentrate requires low energy to foam and the foam solution may be applied with aspirating and non-aspirating discharge devices. Aspirating discharge devices typically produce expansion ratios from 3.5:1 to 10:1 depending on the type of device and the flow rate. Non-aspirating devices, such as handline water fog/stream nozzles or standard sprinkler heads, typically produce expansion ratios from 2:1 to 4:1. Medium-expansion discharge devices typically produce expansion ratios from 20:1 to 60:1.

TYPICAL FOAM CHARACTERISTICS ** (Fresh and Salt Water)

Proportioning Rate	3%
Expansion Ratio	≥ 7
25% Drain Time (min:sec)	≥ 2:30
50% Drain Time (min:sec)	≥ 4:30

** per EN 1568-3, 2008 protocol

Proportioning

The recommended operational temperature range for CHEMGUARD C3B 3% AFFF Concentrate is 35 °F to 120 °F (2 °C to 49 °C). This foam concentrate can be correctly proportioned using most conventional, properly calibrated, in-line proportioning equipment such as:

- Balanced and in-line balanced pressure pump proportioners
- Balanced pressure bladder tanks and ratio flow controllers
- Around-the-pump type proportioners
- Fixed or portable in-line venturi type proportioners
- Handline nozzles with fixed eductor/pick-up tubes

For immediate use: The concentrate may also be diluted with fresh or salt water to a 3% pre-mix solution.

For delayed use: Consult Technical Services for guidance regarding suitability of a stored, pre-mix solution (fresh water only).

Storage and Handling

CHEMGUARD C3B 3% AFFF Concentrate should be stored in the original supplied package (HDPE totes, drums, or pails) or in the recommended foam system equipment as outlined in Tyco Fire Protection Products Technical Bulletin "Storage of Foam Concentrates". The product should be maintained within the recommended temperature range. If the concentrate freezes during transport or storage, full product serviceability can be restored upon thaw with gentle re-mixing.

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 of CHEMGUARD C3B Concentrate can be maximized through optimal storage conditions and proper handling. CHEMGUARD foam concentrates have demonstrated effective firefighting performance with contents stored in the original package under proper conditions for more than 10 years.

Mixing CHEMGUARD C3B Concentrate with other foam concentrates for long-term storage is not recommended. Use in conjunction with comparable 3% AFFF products for immediate incident response is appropriate.

Material of Construction Compatibility

To help avoid corrosion, galvanized pipe and fittings should never be used in contact with undiluted CHEMGUARD C3B 3% AFFF Concentrate. Refer to Tyco Fire Protection Products Technical Bulletin "Acceptable Materials of Construction" for recommendations and guidance regarding compatibility of foam concentrates with common materials of construction in the firefighting foam industry.

Inspection

CHEMGUARD C3B 3% AFFF Concentrate should be inspected periodically in accordance with NFPA 11, EN 13565-2, or other relevant standard. A representative concentrate sample should be sent to Tyco Fire Protection Products Foam Analytical Services or other qualified laboratory for quality analysis per the applicable standard. An annual inspection and sample analysis is typically sufficient, unless the product has been exposed to unusual conditions.

Ordering Information

CHEMGUARD C3B 3% AFFF Concentrate is available in pails, drums, totes, or bulk shipment.

Part No.	Description	Shipping Weight
Pails		
710903	5 gal (19 L)	45 lb (20.4 kg)
Drums		
710904	55 gal (208 L)	45 lb (224.5 kg)
Totes		
710905	265 gal (1003 L)	2463 lb (1117 kg)
704098	320 gal (1211 L)	2963 lb (1344 kg)

For bulk orders, consult an account representative.

Safety Data Sheets (SDS) are available at www.chemguard.com.

Note: The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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