

CHEMGUARD C1B 1% AFFF Concentrate

Description

CHEMGUARD C1B 1% AFFF (Aqueous Film-Forming Foam) Concentrate combines fluoro- and hydrocarbon-surfactant technology to provide superior fire and vapor suppression for Class B, hydrocarbon fuel fires. This synthetic foam concentrate is intended for firefighting applications at 1% solution in fresh, salt, or hard water.

CHEMGUARD C1B foam solution utilizes three suppression mechanisms 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 AT 77 °F (25 °C)

| | |
|-----------------------|-----------------------------------|
| Appearance | Pale yellow liquid |
| Density | 1.02 ± 0.02 g/ml |
| pH | 7.0 – 8.5 |
| Refractive Index | 1.3700 minimum |
| Viscosity | 5 ± 2 cSt* |
| Spreading Coefficient | 3 dynes/cm minimum at 1% dilution |
| Freeze Point | 24.6 °F (-4.1 °C) |

*Cannon-Fenske viscometer at 77 °F (25 °C)

Application

CHEMGUARD C1B 1% AFFF Concentrate is intended for use on Class B hydrocarbon fuel fires having low water solubility, such as crude oils, gasolines, diesel fuels, and aviation fuels. It is not suitable for use on polar fuels having appreciable water solubility, such as methyl and ethyl alcohol, acetone, and methyl ethyl ketone.

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

CHEMGUARD C1B Concentrate is ideal for fixed, semi-fixed, and emergency response firefighting systems for industrial and municipal applications. Typical applications include:

- Fuel or chemical storage tanks
- Industrial chemical and petroleum process/storage facilities
- Truck/rail loading and unloading facilities
- Flammable liquid containment areas
- Docks/marine tankers
- Mobile equipment



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Approvals, Listings, and Standards

CHEMGUARD C1B 1% AFFF Concentrate is approved, listed, qualified under, or meets the requirements of the following specifications and standards:

- Underwriters Laboratories Inc. (UL)
 - UL Standard 162, Foam Liquid Concentrates

CHEMGUARD C1B Concentrate is designed in accordance with the following National Fire Protection Association (NFPA) Standards:

- NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam



The environmentally-minded CHEMGUARD C1B 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 C1B 1% AFFF Concentrate may be effectively applied using most conventional foam discharge equipment at 1% dilution with fresh, salt, or hard water. For optimum performance, water hardness should not exceed 500 ppm expressed as calcium and magnesium.

CHEMGUARD C1B 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 Sea Water)

| | |
|--------------------------|--------|
| Proportioning Rate | 1% |
| Expansion Ratio LE | ≥ 7 |
| 25% Drain Time (min:sec) | ≥ 2:30 |
| 50% Drain Time (min:sec) | ≥ 4:30 |

**per EN 1568-3, 2008 protocol

Proportioning

CHEMGUARD C1B 1% AFFF 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

The recommended operational temperature range for this foam concentrate is 35 °F to 120 °F (2 °C to 49 °C).

For immediate use: The concentrate may be diluted with fresh or sea water to a 1% pre-mix solution.

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

Materials of Construction Compatibility

To avoid corrosion, galvanized pipes and fittings should never be used in contact with undiluted concentrate. Please contact Technical Services for recommendations and guidance regarding compatibility of CHEMGUARD concentrates with common materials of construction in the firefighting foam industry.

Storage and Handling

CHEMGUARD C1B 1% AFFF Concentrate should be stored in the original supplied package (HDPE totes, drums, or pails) or in the foam system equipment recommended by Technical Services. The product should be maintained within the recommended 35 °F to 120 °F (2 °C to 49 °C) operational temperature range. If the concentrate freezes during transport or storage, full product serviceability can be restored upon thaw with gentle re-mixing.

Factors affecting foam concentrate long-term effectiveness include temperature exposure and cycling, storage container, air exposure, evaporation, dilution, and contamination. The effective life of CHEMGUARD C1B 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 C1B Concentrate with other foam concentrates for long-term storage is not recommended. Use in conjunction with comparable 1% AFFF products for immediate incident response is appropriate.

Inspection

CHEMGUARD C1B 1% AFFF Concentrate should be inspected periodically per NFPA 11 "Standard for Low-, Medium-, and High-Expansion Foam," EN 13565-2 "Foam System Standard," 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 C1B 1% AFFF Concentrate is available in pails, drums, totes, or bulk shipment.

| Part No. | Description | Shipping Weight | Container Volume |
|----------|--------------------------|----------------------|---|
| 770800 | Pail 5 gal (19 L) | 45 lb (20.4 kg) | 1.25 ft ³ (0.0353 m ³) |
| 770801 | Drum 55 gal (208 L) | 495 lb (224.5 kg) | 11.83 ft ³ (0.3350 m ³) |
| 770802 | Tote 265 gal (1000 L) | 2463 lb (1117 kg) | 50.05 ft ³ (1.42 m ³) |

Bulk Order Contact Technical Services

Safety Data Sheet (SDS) available at www.chemguard.com

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

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