

## CHEMGUARD DEEPATTACK 3% AFFF Concentrate and Wetting Agent

### Description

CHEMGUARD DEEPATTACK Firefighting Foam Concentrate combines fluoro- and hydrocarbon-surfactant technologies to provide superior fire and vapor suppression for both Class B hydrocarbon and Class A fuel fires. This synthetic foam concentrate is intended for firefighting applications utilizing fresh, salt, or hard water solution.

CHEMGUARD DEEPATTACK foam solution utilizes multiple firefighting suppression mechanisms:

- As a 3% AFFF (Aqueous Film-Forming Foam), the foam blanket blocks oxygen supply to a Class B hydrocarbon fuel fire and forms an aqueous film that suppresses vapor and seals the fuel surface.
- As a 0.10% to 1.0% Class A wetting agent solution, the significantly reduced surface tension enhances water spread and penetration. The high viscosity and extended drain time of the foam allows it to cling to vertical and horizontal fuel surfaces for longer wetting. This promotes solution penetration of fuel surfaces (including charred exteriors) and helps control deep-seated Class A fires, protecting structures and reducing the risk of ignition/re-ignition.
- The water content and insulative properties of the foam blanket produce a cooling effect which contributes to fire suppression in both Class A and B fuel fires.

### TYPICAL PHYSIOCHEMICAL PROPERTIES AT 77 °F (25 °C)

Appearance	Pale yellow liquid
Density	1.03 ± 0.02 g/ml
pH	7.0 - 8.5
Refractive Index	1.3580 minimum
Viscosity*	2.5 ± 1.5 cSt
Spreading Coefficient	3 dynes/cm minimum at 3% dilution
Pour Point	21 °F (-6 °C)
Freeze Point	21 °F (-6 °C)

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

The environmentally-minded CHEMGUARD DEEPATTACK 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 and the current ECHA Directive (EU) 2017/1000



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### Approvals, Listings, and Standards

CHEMGUARD DEEPATTACK Concentrate is designed in accordance with National Fire Protection Association (NFPA) 11 Standard for Low-, Medium-, and High-Expansion Foam, and NFPA 18 Standard on Wetting Agents. The concentrate is approved, listed, qualified under, or meets the requirements of the following specifications and standards:

- UL Certified Wetting Agent for Class A and Class B fires
- UL Standard 162, Foam Liquid Concentrates

### Application

CHEMGUARD DEEPATTACK Concentrate has excellent wetting properties that can combat Class A or B fires. When used as a wetting agent, the concentrate should be added to water at a concentration of 0.10% to 1.0% on Class A fuels or 0.5% or greater on Class B hydrocarbon fuels.

CHEMGUARD DEEPATTACK Concentrate is suitable for use as a 3% AFFF solution on non-polar 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.

CHEMGUARD DEEPATTACK Concentrate may also be used in conjunction with dry chemical agents to provide even greater fire suppression performance. It can be ideal for fixed, semi-fixed, and emergency response firefighting applications such as:

- Class A fuel fires - wild land, structural, paper, coal, rubber
- Compressed Air Foam Systems (CAFS)
- Industrial chemical and petroleum storage tanks and processing facilities
- Flammable liquid containment areas
- Mobile response equipment

## Foaming Properties

CHEMGUARD DEEPATTACK Concentrate may be effectively applied using most conventional foam discharge equipment or specialized equipment such as Compressed Air Foam Systems (CAFS) at the appropriate dilution with fresh, salt, or hard water. For optimum performance, water hardness below 500 ppm (expressed as calcium and magnesium) is recommended.

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

### TYPICAL FOAM CHARACTERISTICS\*\* (Fresh and Sea Water)

Proportioning Rate	3%	0.5%	0.1%
Surface Tension (dynes/cm)	17.59	18.11	25.55
Low Expansion Rate	7.0	2.3	1.8
25% Drain Time (min:sec)	2:20	<1:00	<1:00
50% Drain Time (min:sec)	4:10	<1:30	<1:30

\*\*per EN 1568-3, 2008 protocol

## Proportioning

The recommended operational temperature range for CHEMGUARD DEEPATTACK Concentrate is 35 °F to 120 °F (2 °C to 49 °C), per UL-162. This foam concentrate can be correctly proportioned at the appropriate dilution rate using most conventional, properly-calibrated, in-line proportioning equipment such as:

- Direct injection
- Compressed Air Foam Systems (CAFS)
- 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 venture type proportioners
- Handline nozzles with fixed eductor/pick-up tubes

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

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

## Materials of Construction Compatibility

To help avoid corrosion, galvanized pipe and fittings should never be used in contact with undiluted CHEMGUARD DEEPATTACK Concentrate. Refer to Johnson Controls Technical Bulletin "Acceptable Materials of Construction" for recommendations and guidance regarding compatibility of foam concentrate with common materials of construction in the firefighting foam industry.

## Storage and Handling

CHEMGUARD DEEPATTACK Concentrate should be stored in the original supplied package (HDPE totes, drums, or pails) or in the recommended foam system equipment as outlined in Johnson Controls 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 DEEPATTACK Concentrate can be maximized through optimal storage conditions and proper handling. CHEMGUARD concentrates have demonstrated effective firefighting performance with contents stored in the original package under proper conditions for more than 10 years.

Mixing CHEMGUARD DEEPATTACK Concentrate with other foam concentrates for long-term storage is not recommended. Use in conjunction with comparable foam concentrate products for immediate response is appropriate.

## Inspection

CHEMGUARD DEEPATTACK 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 Johnson Controls 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 DEEPATTACK Concentrate is available in pails, drums, totes, or bulk shipment.

Part Number	Description	Approximate Shipping Weight
<b>Pails</b>		
704697	5 gal (19 L)	45 lb (20.4 kg)
<b>Drums</b>		
704698	55 gal (208 L)	495 lb (224.5 kg)
<b>Totes*</b>		
704699	265 gal (1,003 L)	2,463 lb (1,117 kg)

For bulk orders, consult an account representative.

\*Totes are not UL approved packaging.

Safety Data Sheets (SDS) are available at [www.chemguard.com](http://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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