

# Foam Concentrates and Hardware



Municipal Solutions



## About CHEMGUARD Products

CHEMGUARD products have served the global firefighting industry for decades with high-quality, field-proven products, expert technical service, innovative R&D, and customized solutions for challenging fire hazards. The CHEMGUARD portfolio includes firefighting foam concentrates and annual testing service, dry chemicals, foam system hardware, and emergency fire response equipment.

## Foam Concentrates and Dry Chemicals

The CHEMGUARD foam concentrate product line is formulated and 3rd-party tested to meet a wide range of firefighting challenges, including special hazards in the industrial, marine, aviation, mining, municipal, petrochemical, and transportation industries. Our foam concentrates are manufactured in ISO 9001:2008 certified facilities and are subject to stringent quality controls, from incoming raw materials inspection to finished product testing. The CHEMGUARD product line includes AFFF, AR-AFFF, Class B/A, Class A wetting agents, high-expansion, fluoroprotein, and training foam concentrates.

Periodic concentrate testing is required to check physical properties and fire suppression performance. Accordingly, Johnson Controls Foam Analytical Services offers concentrate sample analysis for a nominal fee as an integral part of CHEMGUARD customer support.



### Class B/A

CHEMGUARD Class B/A foam concentrate provides true, firefighting effectiveness for both Class A and Class B type fires. Unlike most Class A foam concentrates, this foam offers both an NFPA-18 Wetting Agent rating (for Class A and Class B fuels) and a UL-162, Class B hydrocarbon fuel listing. This product provides the flexible, dual functionality of a Class A foam plus an AFFF concentrate.



## AFFF

CHEMGUARD Aqueous Film-Forming Foam (AFFF) Concentrates combine fluoro- and hydrocarbon-surfactant technologies to provide fire and vapor suppression for Class B hydrocarbon fuel fires. AFFF foam solutions utilize three suppression mechanisms for rapid fire knockdown and burnback resistance: 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.



## AR-AFFF

CHEMGUARD Alcohol Resistant Aqueous Film-Forming Foam (AR-AFFF) Concentrates combine a water soluble polymer (polysaccharide) with AFFF surfactant technology to provide fire and vapor suppression for both Class B polar solvent as well as hydrocarbon fuel fires. AR-AFFF foam solutions create a foam blanket with cooling and oxygen-blocking fire suppression mechanisms similar to AFFF. In addition, when liquid drains from the foam blanket it forms either an aqueous film on a hydrocarbon fire, or a polymeric membrane on a polar solvent fire to suppress the vapor and seal the fuel surface.



## Class A

CHEMGUARD Class A foam concentrates are a mixture of foaming and wetting agents used in a variety of firefighting applications. When proportioned with water, Class A concentrates reduce the surface tension of water, allowing greater penetration of the foam into most Class A fuels. CHEMGUARD Class A foams cling to surfaces such as charred wood with minimal run off, enhancing fire suppression and reducing water usage. CHEMGUARD Class A concentrates are effective in fighting many deep-seated Class A fires, such as paper, tires, and wooden structures as well as wildland.



## High Expansion

CHEMGUARD High-Expansion Foam Concentrates are flexible firefighting agents used in fighting Class A, Class B, and LNG fires both indoors and outdoors. Expansion ratios from 50:1 up to 1000:1 make them suitable for a variety of applications including aircraft hangars, flammable liquid storage areas, and LNG facilities.



## Fluoroprotein

CHEMGUARD Fluoroprotein foam concentrates combine hydrolyzed protein with fluorochemical surfactants, foam stabilizers (metal salts), bactericide, corrosion inhibitors, freeze point depressants and solvents to provide superior fire and vapor suppression for Class B hydrocarbon fuel fires. Aspirated CHEMGUARD fluoroprotein foam offers a robust, stable foam blanket which enhances burnback resistance.



## Training Foam

CHEMGUARD training foam concentrates are intended to simulate AFFF (Aqueous Film-Forming Foam) concentrates for training (non-firefighting) purposes. These concentrates may be correctly proportioned over a range of dilutions (typically 1%) with most conventional, properly calibrated, proportioning equipment and may be applied in conjunction with siliconized dry chemical agents.



## Dry Chemical

The CHEMGUARD line of Class A, Class B, and Class C dry chemical delivers effective, consistent firefighting performance. CHEMGUARD Purple-K firefighting dry chemical is compatible with most foam concentrates for twin-agent application.

# Foam Concentrate Selection Guide

Environmentally-mindful CHEMGUARD foam concentrate formulations contain 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 these concentrates meet the goals of the U.S. Environmental Protection Agency 2010/15 PFOA Stewardship Program and the current ECHA Directive (EU) 2017/1000.\*



CHEMGUARD Product			Applications											Approvals, Listings & Standards														
			Municipal Application / Fuel Type					Industrial Application Type / Fuel Type				Fixed System Fuel Type		UL				FM	US DOD Mil-Spec	USDA / USFS	EN-1568:2008				ICAO Level		IMO 1312	
Type	Description / Concentration	ID	Hydrocarbon	Polar	Structure	Wildland	ARFF	Aviation	Marine	Hydrocarbon	Polar	Hydrocarbon	Polar	UL -162	ULC-S564	UL-139	Wetting Agent	5130	MIL-F-24385F	Spec 307a	Part 1	Part 2	Part 3	Part 4	B	C	Med B/D	
AR-AFFF	1%x3%	C137	x	x	x		x			x	x	x	x	x	x						x		x	x				
	1%x3% Low Temp	C137-LT18	x	x	x		x			x	x	x	x	x	x													
	3%x3%	C335	x	x	x		x			x	x	x	x	x	x						x		x	x				
	3%x3% Low Viscosity	C334-LV	x	x	x		x			x	x	x	x	x	x			x					x	x				
	3%x3% Low Temp	C337-LT13	x	x	x		x		x	x	x	x	x	x	x							x	x	x	x	x	x	
	3%x6%	C364	x	x	x						x	x	x	x	x	x												
AFFF	1%	C1B	x		x					x		x		x	x													
	1% Low Temp	C1B2-LT15	x		x			x		x		x									x		x		x			
		C1M-LT15	x		x			x	x	x		x									x		x		x		x	
	3%	C3B	x		x						x		x		x	x			x									
		C306-MS-C	x		x			x			x		x		x					x								
		C3IB2	x		x			x			x		x													x		
	3% Low Temp	C3IC1	x		x			x			x		x		x	x											x	
		C3B-LT29	x		x				x		x		x		x	x										x		
	6%	C6B	x		x						x		x		x	x												
		C606-MS-C	x		x			x		x		x		x						x								
C6IB2		x		x			x			x		x													x			
C6IC1		x		x			x			x		x		x	x											x		
Class B/A	3% / 0.1-0.5%	DEEPATTACK	x		x	x				x				x	x		x											
Class A	0.1-1%	DIRECTATTACK			x	x														x								
	0.1-1%	CLASS-A PLUS			x	x																						
	0.1-1%	CHEMATTACK			x	x																						
	0.1-1% CAFS	EXTREME Class A			x	x																						
High-Expansion	2% Fresh Water	C2	x		x			x		x		x				x												
	2% Salt Water	C2S	x		x					x		x																
	2% XTRA	CX	x		x					x		x																
Fluoroprotein	3%	CFP3B	x		x				x	x		x		x	x						x		x				x	
	6%	CFP6B	x		x					x		x		x	x						x		x					
	3%x3%	CFPAR331-LT15	x		x			x	x	x	x	x	x								x		x	x	x		x	
Training	Training Foam	CTF1	For Training Purposes Only - Not Intended for Actual Firefighting Application																									

\*Approvals and listings may be confirmed via respective 3rd party approval website and/or by contacting CHEMGUARD technical service support.



## Foam Equipment

CHEMGUARD portable firefighting equipment offers the knockdown capacity needed for a wide array of challenges – from fuel spills at tank farms to aviation emergency response. With a wide variety of nozzles, eductors, generators, foam carts and trailers, CHEMGUARD foam equipment provides durable and targeted foam dispersal and application.

### Handline Nozzles

CHEMGUARD adjustable, constant-flow and low/medium/high-expansion handline nozzles provide a wide range of flexible flow-control options. Applicable for use with AR-AFFF, AFFF, Class B/A, and Class A foam concentrates, these handline nozzles provide excellent foam expansion for quick fire knockdown and suppression. Constructed from brass or anodized black aluminum, CHEMGUARD nozzles offer a full array of discharge patterns, including:

- Adjustable
- Constant-Flow
- Low/Med/High-Expansion



VARI-X-Mini Nozzle



MA-15 Adjustable Handline Nozzle

## Eductors

CHEMGUARD in-line eductors provide a cost-effective method for metering foam concentrate into a water stream. Constructed of corrosion-resistant brass, these eductors enable variable metering at 0%, .5%, 1.0%, 3.0% and 6.0%. The CHEMGUARD in-line eductor system includes the metering valve and an 8-foot pickup-hose assembly.



Self-Educting CEN Nozzle

In-Line Eductor CES95

## Portable Generators

CHEMGUARD portable high-expansion foam generators are compact, lightweight and water-powered so no electrical power is required, making them ideal for use on the fire ground. UL listed and CE marked, CHEMGUARD portable high-expansion foam generators are flexible tools for firefighting in confined spaces or inaccessible areas such as basements, ship-board applications, or mines.



## Foam Carts

CHEMGUARD mobile foam carts feature reinforced-fiberglass tanks compatible with most firefighting foam concentrates. Each foam cart includes an in-line eductor, handline nozzle, and rubber-lined, single-jacket fire hose.



## Foam Trailers

Self-contained CHEMGUARD single-, dual- and triple-tote foam trailers are designed to provide fire suppression and vapor control for demanding applications. The tote trailers may be customized with various options for inlet connections, foam concentrate pumps and piping, proportioning equipment, and self-educing nozzles.



Single Tote Trailer



Triple Tote Trailer



Double Tote Trailer

## About Johnson Controls' Fire Suppression Products

Our fire suppression solutions deliver an unmatched range of suppression systems, extinguishing agents, fire sprinklers and valves, design software, piping products, fittings, firefighting equipment and services that help our customers save lives and protect property. We leverage our global scale and deep expertise to drive innovation, advance safety and solve the unique challenges of customers around the world. Our global line of firefighting foam concentrates are developed and tested at our Research, Development and Engineering Center of Excellence in Marinette, WI, USA (pictured below). With an expansive global distribution network, our foam and hardware manufacturing facilities include Marinette, WI, and Port Arthur, TX, USA; Great Yarmouth, NR, UK; and Cologno Al Serio (BG) IT.



**For more information, contact your regional CHEMGUARD product representative or visit [www.chemguard.com](http://www.chemguard.com).**

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