



## TECHNICAL DATA

## VIKING ARC 3X3S C6 FOAM CONCENTRATE

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

Visit the Viking website for the latest edition of this technical data page.

### 1. GENERAL DESCRIPTION

Viking ARC 3X3S C6 is high efficiency multipurpose alcohol resistant aqueous film forming foam concentrate (AR-AFFF) consisting of fluorocarbon and hydrocarbon surfactants blended with various solvents, preservatives and stabilizers.

The foam forms an aqueous film that rapidly cuts off the oxygen supply and knocks down the fire. As a result, it is highly effective against hydrocarbon fires. With the addition of special polymers it is also highly effective against polar solvent liquids. The expanded foam, from which the film is drained, forms a stable blanket that suppresses the release of flammable vapors and cools down the fuel surface extinguishing the fire and preventing reignition. The low surface tension of the water-foam solution enables the aqueous film, although heavier than the burning vapors, to float on top of the liquid surface.

When applied on polar solvent fuel fires, a polymeric membrane is formed and makes it possible for the foam blanket to extinguish effectively. This works on foam destroying polar solvent liquids such as pure MTBE or Gasoline mixed with MTBE.

Viking ARC3X3S should be used at 3% of the solution volume on both hydrocarbon and polar solvent liquids (3 parts concentrate in 97 parts of water) in brackish, fresh or sea water.

#### Features:

- Tested, Listed and Approved with Sprinklers.
- Excellent firefighting on Class A and B polar solvent and hydrocarbon fires.
- For use in high risk applications such as warehouses, offshore installations, oil and chemical tankers, petrochemical and chemical plants.



**WARNING:** Cancer and Reproductive Harm-  
www.P65Warnings.ca.gov

### 2. LISTINGS AND APPROVALS



#### FM Approved

Refer to the FM Approval guide for systems and devices that are approved for use with this concentrate. Refer to the system and device data sheets from Viking, NFPA 11, FM Global Property Loss Prevention Data Sheets, and relevant local standards for correct system design. FM Approval of the foam extinguishing system is contingent upon the design, installation, testing and maintenance performed in accordance with NFPA 11 and/or FM Global Property Loss Prevention Data Sheet 4-12, Foam/Water Sprinkler Systems.



#### UL Listed - GFGV.EX27255

Underwriters Laboratories, UL 162 7th Edition Refer to the UL Listing for systems and devices that are approved for use with this concentrate. Refer to the system and device data sheets from Viking, NFPA 11, and relevant local standards for correct system design.

### 3. TECHNICAL DATA

#### Physical Data

Specific gravity at 68 °F (20°C).....	1,03 +/- 0.01 g/ml
Viscosity at 77 °F (25 °C) spindle #4,60 rpm.....	2600 mPas +/- 300
Viscosity at 68 °F (20 °C) spindle #4,60 rpm.....	2650 mPas +/- 300
Viscosity at 36 °F (2° C) spindle #4,60 rpm.....	2900 mPas +/- 300
pH.....	6,0 to 7,5
Freezing point.....	32 °F (0 °C)
Recommended storage temperature.....	32 to 131 °F (0 to 55°C)
UL/FM temperature range.....	35 to 120 °F (1,7 to 49°C)
Suspended sediment (v/v).....	Less than 0,2%
Surface tension .....	≤ 18,0 dynes/cm



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**TABLE 1: ORDERING INFORMATION**

Volume	Packaging	Part Number	Approximate Shipping Weight*		Dimensions* In (mm)		Sales Region
			Lbs.	Kg	Inches	mm	
25 Litres	Can	V-ARC3X3S/25	55**	25**	11x10x17	295x260x441	EMEA/APAC
200 Litres	Drum	V-ARC3X3S/200	461**	209**	23x23X37	581x581x935	EMEA/APAC
1000 Litres	IBC Tote	V-ARC3X3S/1000	2340	1060	47x39x45	1200x1000x1150	EMEA/APAC
6.5 US Gal.	Can	F20227-6.5	27**	60**	11x10x29	295x260x737	AMERICAS
55 US Gal.	Drum	F20227-55	488**	221**	23x23X37	581x581x935	AMERICAS
265 US Gal.	IBC Tote	F20227-265	2393	1084	47x39x45	1200x1000x1150	AMERICAS
Bulk	Bulk tanker deliveries available by special request. Contact Viking for availability.						
*Shipping Weight and Dimensions are approximate. **Weight does not include pallet.							

#### 4. ENVIRONMENTAL IMPACT

Viking ARC 3X3S C6 is formulated using specially selected raw materials, selected for their fire performance and their environmental profile. Viking ARC 3X3S C6 is biodegradable. It contains only C6 fluorotemomers. The handling of foam concentrate or foam solution spills should be in accordance with local regulations. Sewage systems should have no processing issues with a 3% foam solution based on Viking ARC 3X3S C6, but local sewage operators should be consulted in this respect. Our C6 foams contain no PFOA and no PFOS, in accordance with US EPA Stewardship Program 2010/15 and EU Directive 2006/122/EC and amended Council Directive 76/769/EEC. Full details will be found in the Safety Datasheet (SDS).

#### 5. APPLICATION

Viking ARC 3X3S C6 is intended for use on Class A and Class B fires with hydrocarbon fuel as well as on polar solvent fuels i.e. Isopropanol, Methanol, and other foam destroying product fires such as MTBE, and Class A fires such as paper, wood and textiles. Refer to the FM Approval Guide and UL Listing for approved fuel hazards and application rate. It can be used with both aspirating and non-aspirating discharge devices. It is compatible with all dry chemical powders; however, this statement is not verified by UL or FM.

#### 6. PROPORTIONING

Viking ARC 3X3S C6 can easily be proportioned at the correct dilution using conventional equipment such as:

- Inline inductors
- Inline Balanced Pressure, proportioning systems (ILBP)
- Bladder tanks and ratio controllers
- Around the pump proportioning systems
- Water motor or turbine foam proportioners
- Self inducing branch pipes and nozzles

Refer to the FM Approval Guide and UL Listing for proportioning equipment approved for use with this concentrate.

#### 7. FIRE PERFORMANCE & FOAMING

Viking ARC 3X3S C6 has been designed to give the best properties of:

- Aqueous film forming foam (AFFF)
- Alcohol resistant foam (ARC)

The fire performance of this product has been measured and documented according to Listings and Approvals stated in this document. The foaming properties depend on equipment used and other variables such as water and ambient temperatures. Average expansion 7:1, average ¼ drainage time 08:30 minutes using UNI 86 test nozzles.



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### 8. SPRINKLER APPLICATION

Sprinkler applications are especially challenging for any foam due to the very low operating pressure and the very low expansion reached. Applying foam through a sprinkler is a very forceful application method and requires foam that can handle direct application and partial submersion into the fuel without losing fire performance and burn back resistance.

Foams that shall be regarded as suitable for sprinkler applications shall also be able to withstand limited time of water deluge directly onto the foam blanket without losing burn back properties. This test is performed on the foam during the Heptane test. Viking ARC 3X3S C6 has passed these tests showing very good extinguishing and burn back properties. Refer to FM Approval Guide and UL Listing for acceptable system configurations used with this concentrate and specific sprinkler SInS and their associated minimum application rates.

### 9. STORAGE / SHELF LIFE

Stored in original unbroken packaging the product can have a long shelf life. Shelf life of 20+ years will be found in temperate climates. As with all foams, shelf life will be dependent on storage temperatures and conditions. If the product is frozen during storage or transport, thawing will render the product completely usable.

Synthetic foam concentrates should be stored in stainless steel or plastic containers or bladder tanks which have been approved and listed for long term compatibility with this specific foam.. Since electrochemical corrosion can occur at joints between different metals when they are in contact with foam concentrate, only one type of metal should be used for pipelines, fittings, pumps, and tanks employed in the storage of foam concentrates. We recommend following our guidelines for storage and handling ensuring favorable storage conditions.

### 10. SCOPE OF DELIVERY

We supply this product in 25 litre and 6.5 US gallon cans, 200 litre and 55 US gallon drums, 1000 litre and 265 US gallon IBC containers and in bulk on special request.

### 11. INSPECTIONS, TESTS AND MAINTENANCE

The foam concentrate should be tested annually. Refer to respective requirements, according to the relevant standards for Inspection, Testing and Maintenance such as NFPA11 or EN13565-2. If applicable, refer to FM Global Property Loss Prevention Datasheet 4-12 for specific test and commissioning criteria. In addition, the "Authority Having Jurisdiction" (AHJ) may have additional maintenance, testing and inspection requirements that must be followed.

### 12. DISPOSAL



At the end of use the product packaging should be disposed of via the national recycling system. Some IBC Tote containers may be part of a national collection scheme. Details will be attached to the IBC Tote if this service is available. Foam Concentrate should be disposed of according to local regulations.

### 13. AVAILABILITY

Please contact Viking for further information.

The product is available directly from Viking and official distributors only.

**EMEA: Viking SA**, ZI Haneboesch, L-4562 Differdange / Niederkorn, Tel.: +352 58 37 37 - 1, Fax: +352 38 37 36, vikinglux@viking-emea.com

**Americas: The Viking Corporation**, 210 N. Industrial Park Drive, Hastings, Michigan 49058, Toll free phone: (800) 968-9501

**APAC: The Viking Corporation (Far East) Pte. Ltd.**, 69 Tuas View Square, Westlink Techpark, Singapore 637621  
Tel: (+65) 6 278 4061, Fax: (+65) 6 278 4609, Email: vikingsingapore@vikingcorp.com

### 14. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

### 15. COMPATIBILITY

Contact Viking with questions regarding the compatibility of this product.



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### 16. VISCOSITY

Viking ARC 3X3S C6 is a non-Newtonian thixotropic liquid. The viscosity will reduce the higher the shear stress is. The table below shows useful viscosity data at different shear stress levels at four different temperatures.

**TABLE 1: VISCOSITY**  
 (Measured with Brookfield RST Rheometer)

Rotation Speed RPM	Shear Rate S-1	Viscosity mPas @ 68 °F (20 °C)	Viscosity mPas @ 41 °F (5 °C)	Viscosity mPas @ 36 °F (2 °C)	Viscosity mPas @ 32 °F (0 °C)
5	10.7	2,638.0	1,967.0	1,926.0	1,856.0
10	21.5	1,526.0	1,106.0	1,085.0	1,045.0
25	53.7	723.0	535.0	525.0	507.0
50	107.4	407.0	314.0	309.0	300.0
100	214.8	238.0	191.0	191.0	185.0
250	537.0	123.0	106.0	106.0	104.0
500	1074.0	76.0	71.0	72.0	71.0
1000	2148.0	48.0	52.0	53.0	52.0
1300	2792.4	41.0	47.0	48.0	48.0