Town of Nantucket
NANTUCKET MEMORIAL AIRPORT
14 Airport Road
Nantucket Island, Massachusetts 02554

Thomas M. Rafter, Airport Manager
Phone: (508) 325-5300
Fax: (508) 325-5306

Commissioners
Daniel W. Drake, Chairman
Arthur D. Gasbarro, Vice Chair
Anthony G. Bouscaren
Andrea N. Planzer
Jeanette D. Topham

April 2, 2019

Ms. Angela Gallagher
Bureau of Waste Site Cleanup
Department of Environmental Protection
20 Riverside Drive
Lakeville, MA 02347

RE: Request for Information/Interim Deadline

Ms. Gallagher,

Nantucket Memorial Airport is in receipt of your March 11, 2019 letter requesting information regarding the Airport's past and current use of Aqueous Film Forming Foams (AFFF) containing Perfluorooctanic acid and perfluooctanesulfonic acid (collectively abbreviated as PFAS). In the attached documentation we include the Airport's best effort to provide a complete and concise response to the questions listed in Attachment A of your letter. Certification of Submittal is also attached.

Please contact me if any clarification or additional information is requested. The Airport looks forward to working with MassDEP on this important issue.

Sincerely,

Thomas Rafter, A.A.E.
Airport Manager

Response to Questions in Attachment A:

1. **Please state the full legal name of the Respondent.**

   Thomas M. Rafter, 14 Airport Rd, Nantucket MA 02554.

2. **Please state the nature of the respondent's relationship to the Airport (*i.e.*, is it the owner, lessor, operator, etc.?).**

   Mr. Rafter is the Airport Manager of Nantucket Memorial Airport, having assumed this position in 2012. He was appointed by the Nantucket Memorial Airport Commission. The Commission is a five-member body appointed by the Town of Nantucket Select Board. The Airport is owned and operated by the Town of Nantucket.

   A photo of Mr. Rafter's Airport Manger's License is included as Exhibit A.

3. **Identify whether the Respondent oversees emergency preparedness at Airport, including management of Aqueous Film Forming Foams (AFFFs) on the property.**

   Mr. Rafter, as Airport Manager, oversees all aspects of Airport operations, including emergency preparedness at the Airport and management of Aqueous Film Forming Foams (AFFF).

4. **If the Respondent does not oversee emergency preparedness at the Airport, please indicate who does.**

   Mr. Rafter oversees emergency preparedness at the Airport. However, there are several staff members at the Airport who assist Mr. Rafter in various emergency response and ARFF procedures, and who collaborated in reviewing and compiling relevant information necessary to respond to questions. These staff members are also responsible for AFFF storage, usage, and compliance activities:

   - Noah Karberg, Assistant Airport Manager.
   - David Sylvia, Compliance Coordinator. Responsible for ARFF prior to 2015.
   - Preston Harimon, Operations Superintendent. Responsible for ARFF since 2015.

5. **Does the Respondent have, or has it ever had, Part 139 Certification from the FAA?**

   Yes. Nantucket Memorial Airport is a Part 139 Certificated Airport. The Certificate was originally issued on May 28, 1973.

   A Photo of the current certificate is included as Exhibit B.

6. **Identify of the purposes for which AFFFs were used at the Airport, including fire suppression and prevention, and including training and demonstrations including those required for FAA certifications.**

   - AFFF has been used at the Airport for the uses outlined under 14 CFR Part 139.315-319: (1) Storage of readiness and reserve AFFF supplies; and (2) Release during required drills, training, testing, and maintenance activity.

Under 14 CFR Part 139.321 and NFPA 407, AFFF has also been stored in readiness for fire suppression at the Airport's Fuel Farm.

7. Identify the current and past amounts of stockpiles, purchases, and donations of AFFFs. Include the brand name and any MSDS associated with any AFFFs.

The Airport's stock of AFFF is 1780 gallons of concentrate, distributed as follows:

Reserve Supply/Storage:
265 gallon tote of Chemguard 3% AFFF C-303 (120 gal remaining)
2 5-gallon buckets of National Foam Centurion 3% (10 gal total)
45 5-gallon buckets of Solberg Arctic 3% AFFF (225 gal total)

Readiness Supply/Active:
Airport-1: 210 gallons, mixed load of Chemguard and National Foam
Airport-2: 205 gallons, mixed load of Chemguard and National Foam
Airport-3: 210 gallons, mixed load of Chemguard and National Foam
Fuel Farm Fire Suppression: 800 gallons, mixed load of Chemguard and National Foam

The purchase history of AFFF by the Airport is summarized below. Procurement paperwork is attached as Exhibit C. Previous procurements are outside of the statutory record retention period and are no longer available.

- 13 55-gallon drums, Cottrell Associates Inc, purchased 12/8/2010.
  Brand: National Foam Aero Water 3% EM MILSPEC
  Status: No longer in stock/applied during certification activities

- 50 5-gallon buckets, FireTech and Safety of New England 1/31/2015.
  Brand: National Foam Aero Water 3% EM MILSPEC
  Status: 10 gallons remain in storage/mixed loads in readiness.

- 265 gallon tote, State Contract Code FIR04, purchased 11/9/2015.
  Brand: Chemguard 3% AFFF C-303
  Status: No longer in stock/applied during certification activities

- 265 gallon tote, State Contract Code FIR04, purchased 5/16/2017.
  Brand: Chemguard 3% AFFF C-303
  Status: 120 gallons remain in storage/mixed loads in readiness

- 45 5-Gal buckets, Firematic Supply Co, purchased 11/26/2018.
  Brand: Solberg Arctic 3% AFFF
  Status: 225 gallons remain in stock

Safety Data Sheets (SDSs) for all brands are included as Exhibit D.

8. Identify any areas at the Airport, at an auxiliary facility, or immediately surrounding the Airport where AFFFs were used, including during training events.

Attached Exhibit E is a map detailing AFFF site application.

9. **Identify all dates when AFFFs were used for training events, emergencies, or otherwise.**

   Under 14 CFR 139.327(c)(1-2), airports are required to retain records of relevant inspections for 12 consecutive calendar months, and records for dates of all training received for 24 consecutive calendar months. Nantucket Memorial Airport also instituted an electronic recordkeeping system during CY 15, which has preserved additional records. Some older records not requiring retention were preserved from 2012 to 2014. These inspections and training records relay specific dates and quantities of AFFF application. Older documentation was not retained, and is no longer available. The available AFFF application history is included as Exhibit F.

   For AFFF application prior to mid-2013, the Airport has interviewed long-serving staff for their recollections of any such application. Information from those interviews is included as Exhibit G. No institutional record is available prior to 1989.

   To the best of our knowledge, AFFF has not been used for any emergencies at the Airport since at least 1989.

10. **Are there structures at the Airport used to contain AFFF when it is deployed?**

    Currently, there are no containment structures utilized at the Airport during AFFF drill/testing/training/maintenance activities. Secondary containment is present at the Airport fuel farm. The FAA has recently issued guidance on this subject through CertAlert No 19-01: Aqueous Film forming Foam AFFF Testing at Certificated Airports (1/17/2019), and Nantucket is reviewing the FAA approved containment systems specified in the CertAlert for possible implementation.

11. **Has the Respondent ever sampled/analyzed its stores of AFFF at the Airport? If so, please provide the analytical data.**

    The Airport has not tested its stores of AFFF concentrate for the presence of PFAS or other similar substances. The Airport does however, perform refractometer testing of AFFF once mixed with water and dispensed from Firefighting Vehicles, to ensure that the concentration is within FAA standards. This information is not included only because we believe it is not responsive to this question, but is available if requested.

12. **Identify the location of any on-site groundwater supply wells or monitoring wells at the Airport.**

    Exhibit H is a map of installed monitoring wells located on and adjacent to Airport property. Not all wells may be currently functional. There is one groundwater well on Airport property. This well serves seasonal housing at the Airport.

13. **Has the Respondent ever sampled groundwater at or around the Airport for perfluoroalkyl substances? If so, include the results of that sampling, the analytical data, and the well construction details.**

    The Airport has not sampled groundwater at or around the Airport for perfluoroalkyl substances.

Exhibit A: Airport Manager's License

massDOT
Massachusetts Department of Transportation
Aeronautics Division

AIRPORT MANAGER LICENSE

This certifies that

Thomas M. Rafter

has been found to be qualified,

in accordance with the provisions of the

Aeronautical Regulations of the Commonwealth of Massachusetts,

to act as *Airport Manager* for the

Nantucket Memorial Airport

License Number: ACK-2018-01

This License shall be valid until December 31, 2018 unless sooner suspended or revoked.

Dr. Jeffrey DeCarlo, Administrator
MassDOT Aeronautics Division

SIGILLUM REIPUBLICÆ MASSACHUSETTENSIS

Exhibit B: Nantucket Memorial Airport Part 139 Certificate

U.S. Department of Transportation
Federal Aviation Administration

AIRPORT OPERATING CERTIFICATE

This certifies that the Town of Nantucket as owner and operator of the Nantucket Memorial Airport, Nantucket MA has met the requirements of the Title 49 USC, Subtitle VII – Aviation Program, and the rules, regulations, and standards prescribed thereunder for the issuance of this certificate, and is hereby authorized to operate as a certificated airport in accordance with and subject to said statute and the rules, regulations, and standards prescribed thereunder, including but not limited to 14 CFR Part 139, and any additional terms, conditions, and limitations contained herein or in the approved Airport Certification Manual on file with the Federal Aviation Administration.

This certificate is not transferable and, unless sooner surrendered, suspended or revoked, shall continue in effect.

By Direction of the Administrator

Effective Date: May 21, 1973

Date: August 17, 2005
at: Burlington, Massachusetts

LaVerne F. Reid

LaVerne F. Reid
Manager, Airports Division

Exhibit C: AFFF Procurement Files

Cottrell Associates Inc
3738 Rawls Church Rd
Fuquay Varina, NC 27526
919-552-0205
919-552-4798 fax

FID# 59-3326039

Invoice

Invoice No.
1263

Bill To:
Nantucket Memorial Airport 14 Airport Rd. Nantucket, MA 02554

Ship To
Nantucket Memorial Airport 14 Airport Rd. Nantucket, MA 02554

Date	P.O. Number	Terms
12/08/10	7471	Net 30

Item	Description	Quantity	Price Each	Amount
1133-8481-6	NATIONAL FOAM AERO WATER 3% EM MILSPEC FOAM 55GAL DRUM	13	985.27	12,808.51
			Total	$12,808.51

4967

ACCOUNTS PAYABLE
Vendor # 10651
Due Date 12/9/10
Approved
Department # 65482
Account # 40221
$12,808.51

RECEIVED
By

FIRE TECH & SAFETY OF NEW ENGLAND, INC.
PO Box 435
84A Route 133
Winthrop, ME 04364-0435
1-800-331-7900 Fax (207) 377-6260

Invoice

Date	Invoice #
1/31/2015	145861

Bill To	Account # 05134
NANTUCKET MEMORIAL AIRPORT-MA 14 AIRPORT ROAD NANTUCKET, MA 02554	

Ship To
NANTUCKET MEMORIAL AIRPORT-MA 14 AIRPORT ROAD NANTUCKET, MA 02554

P.O. No.	S.O. No.	Ship Via	Rep	Terms
9438	113142	SALESMAN	RK	Net 30

Ordered	Shipped	B/O	Description	Unit Price	Amount
50	50	0	NATIONAL FOAM-AER-O-WATER 3EM (MIL SPEC) 5 G	169.00	8,450.00

Warrant Date 2-25-15
Vendor # 28182
Invoice # 145861
PO # 15002353
Org # 65482
Object # 54303
Amount $ $8450.00
Approved

RECEIVED
FEB 09 2015
BY:

check back to NMA

Thank you for your business.

If you would like to receive your invoices by email, please contact Laurie at LChick@FireTechUSA.com.

www.FireTechUSA.com

Total	$8,450.00
Payments/Credits	$0.00
Balance Due	$8,450.00

NANTUCKET MEMORIAL AIRPORT

14 Airport Rd, Nantucket, MA 02554 Ph: 508-325-5300

PURCHASE ORDER

Munis/Blanket PO #	16002220
Contract #	

REQUEST DETAILS			
Date Requested	2015-Nov-09	Requested By	
Department	Operations		
PO Category	Operations	Sub Category	Other/Misc PurchasesMIL SPEC AFFF (Fire Fighting Foam)

VENDOR DETAILS			
Vendor Name	INDUSTRIAL PROTECTION SERVICES	Vendor ID	44050
State Contract Code (if applicable)	FIR04		

EXPENSE ACCOUNT INFORMATION			
Account #	65482-54109	Account Description	MISC PURCH: OPERATIONS
Additional Expense Accounts	Single Expense		

FOR PURCHASES REQUIRING MULTIPLE EXPENSE ACCOUNTS				
Item	Account #	Account Description	Funds Available	PO Amount Needed

TOTAL AMOUNT SPENT					
Budget Amount	Actual Spent	Funds Available	Encumbrances	Funds Available After Encumbrances	Current Fiscal Year
		$16,733.45			$22,290.00

DESCRIPTION	QTY	UNIT PRICE	TOTAL
265 Gal AFFF Tote (Foam)	1	$7,748.92	$7,748.92
		SUBTOTAL	$7,748.92
		SHIPPING	$500.00
		TOTAL	$8,248.92

APPROVAL DETAILS			
Finnace Approved By	Jamie	Date Approved	09-Nov-2015 09:04 EST
Contract Approved By	Janine Torres	Date Approved	09-Nov-2015 09:29 EST
Airport Manager Approved By	Tom Rafter	Date Approved	09-Nov-2015 10:18 EST

NANTUCKET MEMORIAL AIRPORT

14 Airport Rd, Nantucket, MA 02554 Ph: 508-325-5300

PURCHASE ORDER

Munis/Blanket PO #	17004297
Contract #	

REQUEST DETAILS			
Date Requested	2017-May-16	Requested By	
Department	Operations		
PO Category	Operations	Sub Category	Other/Misc Purchases3% ARFF Mil spec foam

VENDOR DETAILS			
Vendor Name	INDUSTRIAL PROTECTION SERVICES	Vendor ID	44050
State Contract Code (if applicable)	FIR04		

EXPENSE ACCOUNT INFORMATION			
Account #	65482-54109	Account Description	MISC PURCH: OPERATIONS
Additional Expense Accounts	Single Expense		

FOR PURCHASES REQUIRING MULTIPLE EXPENSE ACCOUNTS				
Item	Account #	Account Description	Funds Available	PO Amount Needed

TOTAL AMOUNT SPENT					
Budget Amount	Actual Spent	Funds Available	Encumbrances	Funds Available After Encumbrances	Current Fiscal Year
		$-8,324.58			$1,959.00

DESCRIPTION	QTY	UNIT PRICE	TOTAL
265 tote AFFF (price includes shipping)	1	$5,650.00	$5,650.00
		SUBTOTAL	$5,650.00
		SHIPPING	$0.00
		TOTAL	$5,650.00

APPROVAL DETAILS			
Finnace Approved By	Jamie	Date Approved	17-May-2017 08:19 EDT
Contract Approved By		Date Approved	
Airport Manager Approved By	Tom Rafter	Date Approved	17-May-2017 13:34 EDT

NANTUCKET MEMORIAL AIRPORT

14 Airport Rd, Nantucket, MA 02554 Ph: 508-325-5300

PURCHASE ORDER

Munis/Blanket PO #	19002570
Contract #	

REQUEST DETAILS			
Date Requested	2018-Nov-26	Requested By	
Department	Operations		
PO Category	Operations	Sub Category	Other/Misc PurchasesAFFF

VENDOR DETAILS			
Vendor Name	FIREMATIC SUPPLY CO INC	Vendor ID	28187
State Contract Code (if applicable)			

EXPENSE ACCOUNT INFORMATION			
Account #	65482-54109	Account Description	MISC PURCH: OPERATIONS
Additional Expense Accounts	Single Expense		

FOR PURCHASES REQUIRING MULTIPLE EXPENSE ACCOUNTS				
Item	Account #	Account Description	Funds Available	PO Amount Needed

TOTAL AMOUNT SPENT					
Budget Amount	Actual Spent	Funds Available	Encumbrances	Funds Available After Encumbrances	Current Fiscal Year
$28,053.95	$1,948.18	$26,105.77	$4,781.69	$21,324.08	$0.00

DESCRIPTION	QTY	UNIT PRICE	TOTAL
AFFF (5 gal pails)	45	$155.40	$6,993.00
		SUBTOTAL	$6,993.00
		SHIPPING	$0.00
		TOTAL	$6,993.00

APPROVAL DETAILS			
Finnace Approved By	Jamie	Date Approved	26-Nov-2018 12:42 EST
Contract Approved By		Date Approved	
Airport Manager Approved By	Tom Rafter	Date Approved	26-Nov-2018 15:42 EST

Exhibit D. Safety Data Sheets

MATERIAL SAFETY DATA SHEET

CHEMGUARD 3% AFFF C-303

Revision Date: 1/25/2006

1. PRODUCT IDENTIFICATION

Chemical Family: Surfactant mixture; fire fighting foam concentrate
Aqueous Film Forming Foam

Product name: Chemguard 3% AFFF C-303

Manufacturer: Chemguard, Inc.
204 South 6th Ave.
Mansfield, TX 76063
emergency phone: 817-473-9964

2. COMPOSITION / INFORMATION ON INGREDIENTS

		ACGIH/PPM		OSHA/PPM	
CAS NO.	Common Name	TWA	STEL	PEL	% by wt
7732-18-5	water				85% - 90%
57018-52-7	propylene glycol t-butyl ether	not established			2% - 4%
7487-88-9	magnesium sulfate	N/A	N/A	N/A	1% - 2%
proprietary mixture	proprietary hydrocarbon surfactant	N/A	N/A	N/A	proprietary
proprietary mixture	proprietary fluorosurfactant	N/A	N/A	N/A	proprietary

3. HAZARDS IDENTIFICATION

Routes of entry: Dermal, inhalation and ingestion
Potential Health Effects: May cause skin and eye irritation.

Carcinogenicity: Not a carcinogen.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Call a physician.
Inhalation: Remove to fresh air.
Skin: Rinse with water. Wash with soap and water. Contaminated clothing should be washed before re-use.
Eyes: Rinse with water. Call a physician.

5. FIRE FIGHTING MEASURES

Flash Point:	>150°F
Flammable Limits in air (lower % by volume):	not evaluated
Flammable Limits in air (upper % by volume):	not evaluated
Auto-ignition Temperature:	not evaluated

General Hazards: None known.
Fire Fighting Equipment: Self contained breathing apparatus
Fire Extinguishing Media: Water, Foam, Carbon Dioxide, Dry Chemical, Halon
Fire and Explosion Hazards: Decomposition products may be toxic.
Hazardous Combustion Products: oxides of nitrogen, sulfur and carbon

6. ACCIDENTAL RELEASE

Contain spills. Vacuum or pump into storage containers, absorb smaller quantities with absorbent materials, and dispose of properly. Washing area with water will create large amounts of foam.

Dispose of released and contained material in accordance with local, state, and federal regulations. Release to local waste treatment plant only with permission.

7. HANDLING AND STORAGE

Store in original container, or appropriate end-use device. Store at temperatures of 35 - 120 degrees F. If the material freezes, it may be thawed without loss of performance.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye Protection: Wear side-shield safety glasses.
Skin Protection: Wear latex gloves.
Respiratory Protection: Use organic vapor respirator if needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	205° - 212°F
Melting Point:	30° F
Specific Gravity:	1.012 g/ml
Vapor Pressure (mm Hg):	N/A
pH	7.0 - 8.5
Flash Point (PMCC):	>150°F
Vapor Density (air = 1)	N/A
Solubility in water:	100%
Appearance:	clear amber liquid
Odor:	slight solvent odor

10. STABILITY AND REACTIVITY

Stability: Stable
Incompatibility: Strong oxidizers
Hazardous Polymerization: Will not occur.
Decomposition Products: Oxides of nitrogen, sulfur, carbon.

11. TOXICOLOGICAL INFORMATION

Eye Irritation: (Rabbits) mild irritant
Skin Irritation: (Rabbits) minimal irritant

Inhalation Toxicity:	not evaluated
Sensitization:	not evaluated
Teratology:	not evaluated
Mutagenicity:	not evaluated
Reproduction:	not evaluated
Acute Oral Effects (Rats):	not evaluated

12. ECOLOGICAL INFORMATION

	CONCENTRATE	SOLUTION (AS USED)
Chemical Oxygen Demand:	210,000 mg/l	6,300 mg/l
Biological Oxygen Demand (20 day):	79,800 mg/l	2,394 mg/l
Biodegradability (B.O.D./C.O.D.)	38%	38%
Total Organic Carbon:	33,600 mg/l	1008 mg/l
LC50 (96 hour pimephales promelas)	233 ppm	7767 ppm
LC50 (48 hour, daphnia magna)	1110 ppm	37,000 ppm

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. Discharge to waste treatment plants only with permission. Anti-foam agents may be used to reduce foaming in waste streams.

14. TRANSPORTATION INFORMATION

Department of Transportation proper shipping name: not regulated

15. REGULATORY INFORMATION

All ingredients are on the TSCA inventory.
No components are reportable under SARA Title III, sec. 313
No components are priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40 CFR 401.15).
No components are reportable under **CERCLA**.

16. OTHER INFORMATION

NFPA Hazard Ratings		**HMIS Identification System**
1	Health Hazard Rating	1
1	Flammability Rating	1
0	Instability/Reactivity Rating	0

CHANGE LOG:

Revision 2 - Revision date changed.

SAFETY DATA SHEET –
ARCTIC™ 3% AFFF FOAM CONCENTRATE
ARCTIC™ 3% DB AFFF FOAM CONCENTRATE

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name:
ARCTIC 3% AFFF FOAM CONCENTRATE

Synonyms:
ARCTIC 3% AFFF; ARCTIC 3%; AMEREX 3% AFFF Foam Concentrate; AMEREX 3% AFFF, AMEREX 3%, ARCTIC 3% DB AFFF FOAM CONCENTRATE, ARCTIC 3% DB AFFF; ARCTIC 3% DB , Amerex 21543

Product Description:
Mixture.

Product Use:
Fire Suppression Agent, Liquid Concentrate.

Restrictions on Use:
None known.

Details of the supplier of the safety data sheet:

The Solberg Company
1520 Brookfield Avenue
Green Bay, Wisconsin 54313 USA
Phone: +1 920 593 9445
Emergency Phone: +1 920 593 9445
E-mail: sds@solbergfoam.com

SECTION 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200:
Serious Eye Damage/Eye Irritation - Category 2A.

GHS Label Elements:

Symbol(s)

Signal Word
Warning.

Hazard Statement(s)
Causes serious eye irritation.

Precautionary Statement(s)

Prevention
Wear eye protection/face protection.
Wash thoroughly after handling.

Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage
None needed according to classification criteria.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
112-34-5	Diethylene glycol monobutyl ether	5-10
61789-40-0	N-Cocamidopropyl-N,N-dimethylglycine, hydroxide, inner salt	1-10

The chemical identity and/or percentage of composition is being withheld as a trade secret.

SECTION 4 - FIRST AID MEASURES

Description of Necessary Measures:
No special measures are necessary.

Inhalation:
If adverse effects occur, remove to uncontaminated area. Call a POISON CENTER or doctor if you feel unwell.

Skin:
Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eyes:
Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention.

Ingestion:
If swallowed, get medical attention. Do NOT induce vomiting.

Most Important Symptoms/Effects:
Acute
Causes serious eye irritation.
Delayed
No information on significant adverse effects.

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media
Not applicable as this is a fire suppression agent.

Unsuitable Extinguishing Media
None known.

Special Hazards Arising from the Chemical
Negligible fire hazard.

Hazardous Combustion Products
Under certain extreme conditions there may be release of toxic and/or corrosive gases: oxides of carbon, oxides of nitrogen, oxides of sulfur, hydrogen fluoride.

Fire Fighting Measures
Move container from fire area if it can be done without risk. Cool containers with water. Dike for later disposal. Avoid inhalation of material or combustion by-products.

Special Protective Equipment and Precautions for Firefighters
Wear protective clothing and equipment suitable for the surrounding fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up:
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if safe to do so. Collect spilled material in appropriate container for disposal.

Environmental Precautions:
Prevent entry into waterways, sewers, basements, or confined areas. Dispose of waste in accordance with environmental legislation.

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling:
Wear protective eye/face protection. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities:
None needed according to classification criteria.
Keep only in original packaging or containers approved by the manufacturer. Do not mix with other extinguishing agent unless otherwise approved by the manufacturer.

Incompatible Materials:
Electrically energized equipment. strong oxidizing agents, water-reactive materials.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits:

Diethylene glycol monobutyl ether	**112-34-5**
ACGIH:	10 ppm TWA inhalable fraction and vapor
Europe:	10 ppm TWA; 67.5 mg/m3 TWA
	15 ppm STEL; 101.2 mg/m3 STEL
Triethanolamine	**102-71-6**
ACGIH:	5 mg/m3 TWA
Ethyl alcohol	**64-17-5**
ACGIH:	1000 ppm STEL
NIOSH:	1000 ppm TWA; 1900 mg/m3 TWA
	3300 ppm IDLH (10% LEL)
OSHA (US):	1000 ppm TWA; 1900 mg/m3 TWA
Mexico:	1000 ppm TWA LMPE-PPT; 1900 mg/m3 TWA LMPE-PPT

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures
There are no biological limit values for any of this product's components.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.

Engineering Controls
Ensure compliance with applicable exposure limits. If necessary, use appropriate local exhaust ventilation to keep exposures below the regulated limits.

Individual Protection Measures, such as Personal Protective Equipment:

Eye/face protection
Wear splash resistant safety goggles.

Skin Protection
Wear suitable protective clothing such as coveralls or long sleeve shirt and pants.

Respiratory Protection
Respiratory protection is not required under normal conditions of use.

Glove Recommendations
Wear suitable gloves: nitrile, latex, rubber gloves.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear light yellow liquid	**Physical State**	Liquid
Odor	Mild	**Color**	Clear to light yellow
Odor Threshold	Not available	**pH**	7 - 8.5
Melting Point	Not available	**Boiling Point**	Not available
Freezing point	-2 °C	**Evaporation Rate**	Not available
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	Not available	**Flash Point**	Does not flash
Lower Explosive Limit	Not applicable	**Decomposition**	Not available
Upper Explosive Limit	Not applicable	**Vapor Pressure**	2.4 kPa at 20 °c
Vapor Density (air=1)	Not available	**Specific Gravity (water=1)**	1 - 1.02
Water Solubility	complete	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not available	**Solubility (Other)**	Not available
Density	Not available	**Molecular Weight**	Not available

Other Information:
No information is available.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity:
No hazardous reaction when handled and stored according to provisions.

Chemical Stability:
Stable under normal conditions of use.

Conditions to Avoid:
None known.

Incompatible Materials:
Electrically energized equipment, strong oxidizing agents, water-reactive materials.

Hazardous decomposition products:
None known.

Thermal decomposition products:
Under certain extreme conditions there may be release of toxic and/or corrosive gases: oxides of carbon, oxides of sulfur, oxides of nitrogen, hydrogen fluoride.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity:
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:

Diethylene glycol monobutyl ether (112-34-5)
Oral LD50 Rat 5660 mg/kg
Dermal LD50 Rabbit 2700 mg/kg
Water (7732-18-5)
Oral LD50 Rat >90 mL/kg
Triethanolamine (102-71-6)
Oral LD50 Rat 4190 mg/kg
Dermal LD50 Rabbit >20 mL/kg
N-Cocamidopropyl-N,N-dimethylglycine, hydroxide, inner salt (61789-40-0)
Oral LD50 Rat 4900 mg/kg
1,2-Propylene glycol (57-55-6)
Oral LD50 Rat 20 g/kg
Dermal LD50 Rabbit 20800 mg/kg
Ethyl alcohol (64-17-5)
Oral LD50 Rat 7060 mg/kg
Inhalation LC50 Rat 124.7 mg/L 4 h

Immediate Effects
May cause eye irritation. Causes mild skin irritation.

Delayed Effects
No information available for the product.

Irritation/Corrosivity Data
Causes serious eye irritation.

Respiratory Sensitization
No information available for the product.

Dermal Sensitization
No information available for the product.

Component Carcinogenicity

Triethanolamine	**102-71-6**
IARC:	Monograph 77 [2000] (Group 3 (not classifiable))
Ethyl alcohol	**64-17-5**
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
NTP:	Known Human Carcinogen (related to Alcoholic beverages)
DFG:	Category 5 (low carcinogenic potency)
OSHA:	Present

Germ Cell Mutagenicity
No information available for the product.

Tumorigenic Data
No information available for the product.

Reproductive Toxicity
No information available for the product.

Specific Target Organ Toxicity - Single Exposure
No information available for the product.

Specific Target Organ Toxicity - Repeated Exposure
No information available for the product.

Aspiration hazard
No information available for the product.

Medical Conditions Aggravated by Exposure
No information available for the product.

SECTION 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Diethylene glycol monobutyl ether	**112-34-5**
Fish:	LC50 96 h Lepomis macrochirus 1300 mg/L [static]
Algae:	EC50 96 h Desmodesmus subspicatus >100 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >100 mg/L IUCLID
Triethanolamine	**102-71-6**
Fish:	LC50 96 h Pimephales promelas 10600 - 13000 mg/L [flow-through]; LC50 96 h Pimephales promelas >1000 mg/L [static]; LC50 96 h Lepomis macrochirus 450 - 1000 mg/L [static]
Algae:	EC50 72 h Desmodesmus subspicatus 216 mg/L IUCLID; EC50 96 h Desmodesmus subspicatus 169 mg/L IUCLID
N-Cocamidopropyl-N,N-dimethylglycine, hydroxide, inner salt	**61789-40-0**
Fish:	LC50 96 h Brachydanio rerio 2 mg/L [semi-static]
Invertebrate:	EC50 48 h Daphnia magna 6.5 mg/L IUCLID
1,2-Propylene glycol	**57-55-6**
Fish:	LC50 96 h Oncorhynchus mykiss 51600 mg/L [static]; LC50 96 h Oncorhynchus mykiss 41 -

	47 mL/L [static]; LC50 96 h Pimephales promelas 51400 mg/L [static]; LC50 96 h Pimephales promelas 710 mg/L
Algae:	EC50 96 h Pseudokirchneriella subcapitata 19000 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >1000 mg/L [static] EPA
Ethyl alcohol	**64-17-5**
Fish:	LC50 96 h Oncorhynchus mykiss 12 - 16 mL/L [static]; LC50 96 h Pimephales promelas >100 mg/L [static]; LC50 96 h Pimephales promelas 13400 - 15100 mg/L [flow-through]
Invertebrate:	LC50 48 h Daphnia magna 9268 - 14221 mg/L IUCLID; EC50 48 h Daphnia magna 2 mg/L [static] EPA

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

Other Toxicity
No additional information is available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal Methods:
Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14 - TRANSPORT INFORMATION

US DOT Information:
UN/NA #: Not regulated as dangerous goods.

IATA Information:
UN#: Not regulated as dangerous goods.

IMDG Information:
UN#: Not regulated as dangerous goods.

TDG Information:
UN#: Not regulated as dangerous goods.

SECTION 15 - REGULATORY INFORMATION

U.S. Federal Regulations:

Diethylene glycol monobutyl ether	**112-34-5**
SARA 313:	1 % de minimis concentration (applies to R-(OCH2CH2)n-OR', where n = 1, 2, or 3, R=Alkyl C7 or less, or R = Phenyl or Alkyl substituted phenyl, R' = H or Alkyl C7 or less, or OR' consisting of Carboxylic acid ester, Sulfate, Phosphate, Nitrate, or Sulfonate, Chemical Category N230) (related to Glycol ethers)

U.S. State Regulations:
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Diethylene glycol monobutyl ether	112-34-5	No	No	No	Yes	Yes
Water	7732-18-5	No	No	No	No	Yes
Triethanolamine	102-71-6	No	Yes	Yes	Yes	Yes
1,2-Propylene glycol	57-55-6	No	No	Yes	Yes	Yes
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This product contains a chemical known to the state of California to cause cancer and/or reproductive/developmental effects.

Ethyl alcohol	**64-17-5**
Carc:	carcinogen , 4/29/2011 (in alcoholic beverages)
Repro/Dev. Tox	developmental toxicity , 10/1/1987 (in alcoholic beverages)

Canadian WHMIS Ingredient Disclosure List (IDL):
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

Diethylene glycol monobutyl ether	**112-34-5**
	1 %
Triethanolamine	**102-71-6**
	1 %
1,2-Propylene glycol	**57-55-6**

	1 %
Ethyl alcohol	**64-17-5**
	0.1 %

Component Analysis – Inventory:

Diethylene glycol monobutyl ether (112-34-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

Water (7732-18-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes

Triethanolamine (102-71-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

N-Cocamidopropyl-N,N-dimethylglycine, hydroxide, inner salt (61789-40-0)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	No	Yes

1,2-Propylene glycol (57-55-6)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

Ethyl alcohol (64-17-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX	TW
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

SECTION 16 - OTHER INFORMATION

Key / Legend:
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO -

International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information:

Disclaimer:
Safety data sheet is for concentrate as received NOT for end-use solution.

SAFETY DATA SHEET – NMS#330
Centurion^{TMC6} 3%
Aqueous Film Forming Foam Concentrate (AFFF)

1. IDENTIFICATION

Product Name	Centurion^{TMC6} 3% Aqueous Film Forming Foam Concentrate (AFFF)
Recommended use of the chemical and restrictions on use	
Identified uses	Firefighting Foam Concentrate
Restrictions on Use	See Section 15
Company Identification	National Foam 350 East Union Street West Chester, PA 19382
Customer Information Number	(610) 363-1400
Emergency Telephone Number	Infotrac at (800) 535-5053
Issue Date	February 11, 2019
Supersedes Date	October 8, 2018

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, the Canadian Hazardous Products Regulations (HPR) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Eye Damage/Irritation – Category 2A

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Causes serious eye irritation.

Precautionary Statements

Prevention
Wash hands thoroughly after handling.
Wear eye protection and face protection.
Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Storage
None
Disposal
None

Other Hazards
This product contains fluoroalkyl surfactants and should be disposed of by high temperature incineration. See Section 13 for additional information.

2. HAZARD IDENTIFICATION

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	<5%
Acute dermal toxicity	<5%
Acute inhalation toxicity	10 - 20%
Acute aquatic toxicity	<10%

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CAS Number	Concentration*
Dipropylene Glycol Monomethyl Ether	34590-94-8	1 - 5%
Sodium decyl sulfate	142-87-0	1 - 5%
Alkylpolyglycoside	132778-08-6	1 - 5%

*Exact concentration withheld as trade secret.

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.
Ingestion
Dilute by drinking large quantities of water and obtain medical attention.
Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a fire. Use extinguishing agent appropriate to other materials involved.

Specific hazards arising from the chemical
None known

5. FIRE - FIGHTING MEASURES

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing. Prevent skin and eye contact.

Environmental Precautions
Prevent foam concentrate or foam solution from entering ground water, surface water, or storm drains. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations.

Methods and materials for containment and cleaning up
Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Wear appropriate protective clothing. Prevent skin and eye contact.

Conditions for safe storage
Store in original containers between 35°F and 120°F (2°C and 49°C). Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Dipropylene Glycol Monomethyl Ether
ACGIH: TLV 100 ppm, 8hr; 15 min STEL 150 ppm; Skin Designation: air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
OSHA Z-1 PEL: 100 ppm (600 mg/m3) Limit applies to skin.
Sodium Decyl Sulfate
None established
Alkylpolyglycoside
None established

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures
Respiratory Protection
Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.
Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State	Liquid
Color	Pale yellow
Odor	Mild, pleasant
Odor Threshold	No data available
pH	8.0
Specific Gravity	1.025
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	>200°F
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (%)	No data available
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	Not applicable

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

10. STABILITY AND REACTIVITY

Conditions to Avoid
Contact with incompatible materials

Incompatible Materials
Water reactive materials – burning metals – electronically energized equipment

Hazardous Decomposition Products
Oxides of carbon – hydrogen fluoride – aldehydes – ketones – organic acids

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Dipropylene Glycol Monomethyl Ether
Oral LD50 (rat) >5000 mg/kg
Dermal LD5 (rabbit) >9510 mg/kg
Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration

Specific Target Organ Toxicity (STOT) – single exposure
Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure
Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation
Product: Primary irritant (rabbit) (tested on a similar product)
Sodium decyl sulfate: Risk of serious eye damage (>=20%) Causes serious eye irritation (>=10 - <20%).
Alkylpolyglycoside: Severely irritating (rabbit) (50% solution)

Skin Corrosion/Irritation
Product: Not a primary irritant (rabbit) (tested on a similar product)

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No relevant studies identified.

12. ECOLOGICAL INFORMATION

Mobility in soil
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bioaccumulative Potential
No relevant studies identified.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
This product, as sold, is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.
Concentrate
Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is recommended.
Foam/Foam Solution
Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations, high temperature incineration is recommended.
NOTE: Please consult National Foam for additional information regarding the disposal of foam concentrates and foam solutions.

14. TRANSPORT INFORMATION

Shipping Information

Shipping Description	Fire Extinguisher Charges or Compounds N.O.I., Class 70
National Motor Freight Code	69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules when transporting this material.

15. REGULATORY INFORMATION

United States TSCA Inventory
This product contains an ingredient that has restricted use under the EPA Toxic Substance Control Act. This product may only be used as a firefighting foam. Any other use of this product is strictly prohibited.

15. REGULATORY INFORMATION

Canada DSL Inventory
This product contains an ingredient that is not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

SARA Title III Sect. 311/312 Categorization
Eye irritation

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

California Proposition 65

WARNING: This product can expose you to chemicals including formaldehyde, which is known to the State of California to cause cancer, and perfluorooctanoic acid, 1,4 dioxane and methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov."

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
None

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
BOD_5:Biochemical Oxygen Demand (5 day)
CAS#: Chemical Abstracts Service Number
COD: Chemical Oxygen Demand
EC50: Effect Concentration 50%
IARC: International Agency for Research on Cancer
LC50: Lethal Concentration 50%
LD50: Lethal Dose 50%
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
N/A: Denotes no applicable information found or available
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RQ: Reportable Quantity
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act

16. OTHER INFORMATION

Revision Date: February 11, 2019
Replaces: October 8, 2018
Changes made: Changes to Section 15.

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

Centurion is a trademark of Angus International.

The information and recommendations presented in this SDS are based on sources believed to be accurate. National Foam assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.

Exhibit E. Application Map

A B C D E F G H I J K L

1 2 3 4 5 6 7

Fuel Farm
V-33
V-35
V-7
V-8
V-10
South Ramp @ J
Fuel Farm
V-13
V-12
V-16
V-30
V-31
South Ramp @ B
RW 24 Approach
V-15
Primary Staging Area
RW6 Runup
RWY 06
RWY 24
V-17
RWY 12
Maint. & NRTA
Gate 9
V-20
V-18
V-23
V-29
Pit
Sand Pit
V-24
NEC Generators
Yates & Ramos Gas
V-25
RW 15/33 Mid
Strojny Lot
Radar
V-26
RWY 30
V-28
Isolation Area
RWY 33
V-27

Legend

Ditch

Fence

200 0 600 Feet

Nantucket Memorial Airport Emergency Plan Grid Map

Document Path: P:\2013\E2X67300 - Nantucket Airport Master Plan\Drawings\ArcMap\ACK Emergency Plan update.mxd

Exhibit F. Detailed AFFF Application History, 2013-Current

ACK AFFF Detailed Application History

Vehicle	Purpose	Date	*Gal. Conc. AFFF	*Gal. Finished Foam	*Gal. Process Water	AFFF Brand	Notes
Airport-1	FAA Testing	10/15/2018	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	10/10/2018	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	4/24/2018	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	4/13/2018	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	4/6/2018	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	10/20/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	10/17/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	10/11/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	6/14/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	6/2/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	4/3/2017	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	10/20/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	10/19/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	9/2/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	8/3/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	4/7/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	4/5/2016	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	11/15/2015	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	11/5/2015	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	10/26/2015	25	1,000	2,000	Chemguard/National Foam	
Airport-3	FAA Testing	6/8/2015	25	1,000	2,000	Chemguard/National Foam	New Equipment Acceptance Test
Airport-1	FAA Testing	3/23/2015	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	3/23/2015	25	1,000	2,000	Chemguard/National Foam	
Airport-1	Training Exercise	10/9/2014	25	1,000	2,000	Chemguard/National Foam	May not have used AFFF
Airport-2	FAA Testing	8/12/2014	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	8/11/2014	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	2/19/2014	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	2/18/2014	25	1,000	2,000	Chemguard/National Foam	
Airport-1	FAA Testing	7/9/2013	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	7/9/2013	25	1,000	2,000	Chemguard/National Foam	
Airport-2	FAA Testing	8/16/2012	25	1,000	2,000	Chemguard/National Foam	
Airport-1	Training Exercise	UNK 2011	25	1,000	2,000	Chemguard/National Foam	May not have used AFFF

Exhibit G. Approximate AFFF Application History, 1989-2013

ACK AFFF Application, Approximate Summary

Location	Start Year	End Year	Purpose	Frequency	Est. Total AFFF Conc applied	AFFF Brand	Notes
Sand Pit	1989	1994	Training/Testing	1-2 applications/yr	150-300 gal	UNK	
Sand Pit	2008	2008	Triennial Drill	1x	10 gal	National Foam	Single event
RW6 Runup	1995	2015	Training/Testing	1-2 total applications	25-50 gal	UNK, National Foam	
Strojny Lot	2015	Current	Training/Testing	6 annual applications	600-750 gal	National Foam, Chemguard	2 tests per ARFF truck
South Ramp @ J	2015	2018	Training/Testing	1-2 total applications	25-50 gal	National Foam	
RW 24 Approach	1995	2015	Training/Testing	1-2 applications/yr	275-550 gal	UNK, National Foam	1 truck until 2001, then 2 after 2001
Fuel Farm	1998	2013	Testing	Every 2 years	200 gal	UNK, National Foam	
RW 15/33 Mid	1989	2013	Certification Drill	annual	625 gal	UNK, National Foam	Certification Inspection

Exhibit H. Well location map

A B C D E F G H I J K L

1 2 3 4 5 6 7

Fuel Farm
V-33
V-35
V-7
V-8
V-10
V-13
V-12
V-16
V-30
V-31
ARFF
H
RWY 15
E
J
F
G
D
C
B
A
V-15
Primary Staging Area
RWY 06
RWY 24
V-17
RWY 12
Maint. & NRTA
Gate 9
V-20
V-18
V-23
V-29
Pit
V-24
NEC Generators
Seasonal Housing,
Supply Well
Yates & Ramos Gas
V-25
Radar
V-26
RWY 30
V-28
Sampling Well Locations
Isolation Area
RWY 33
V-27

Legend

Ditch

Fence

200 0 600 Feet

Nantucket Memorial Airport
Emergency Plan Grid Map

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