



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name:

ARCTIC U.S. TYPE 3 (3%) MILSPEC AFFF FOAM CONCENTRATE, ARCTIC 3% MILSPEC AFFF FOAM CONCENTRATE

Synonyms:

ARCTIC U.S. TYPE 3 (3%) MILSPEC; ARCTIC U.S. TYPE 3 MILSPEC AFFF; ARCTIC U.S. TYPE 3 MILSPEC; ARCTIC TYPE 3 (3%) MILSPEC, ARCTIC 3% MILSPEC AFFF; ARCTIC 3% MILSPEC; 3% MILSPEC AFFF

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.



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

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
Not available	Non-hazardous ingredients	60-90
112-34-5	Diethylene glycol butyl ether	10-20
142-31-4	Sodium octyl sulfate	1-10
64-17-5	Ethyl alcohol	1-5
107-21-1	Ethylene glycol	1-5

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.



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

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 nitrogen, oxides of carbon, 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.

Further information on storage conditions: Keep only in original packaging or containers approved by the manufacturer. Do not mix with other extinguishing agent unless otherwise approved by the manufacturer.



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

Incompatible Materials:

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

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits:

<u>Diethylene glycol butyl ether</u>	<u>112-34-5</u>
ACGIH:	10 ppm TWA inhalable fraction and vapor
Europe:	10 ppm TWA; 67.5 mg/m ³ TWA 15 ppm STEL; 101.2 mg/m ³ STEL
<u>Ethyl alcohol</u>	<u>64-17-5</u>
ACGIH:	1000 ppm STEL
NIOSH:	1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH (10% LEL)
OSHA (US):	1000 ppm TWA; 1900 mg/m ³ TWA
Mexico:	1000 ppm TWA LMPE-PPT; 1900 mg/m ³ TWA LMPE-PPT
<u>Ethylene glycol</u>	<u>107-21-1</u>
ACGIH:	100 mg/m ³ Ceiling aerosol only
Europe:	20 ppm TWA; 52 mg/m ³ TWA Possibility of significant uptake through the skin 40 ppm STEL; 104 mg/m ³ STEL
Mexico:	100 mg/m ³ Ceiling aerosol

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.



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

Skin Protection

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

Respiratory Protection

No respirator is 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	Light yellow
Odor Threshold	Not available	pH	7 - 8
Melting Point	Not available	Boiling Point	Not available
Freezing point	Not available	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 available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	1.009 - 1.049
Water Solubility	Complete	Partition coefficient: n-octanol/water	Not available
Viscosity	2 - 20 cSt	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.



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

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 butyl ether (112-34-5)

Oral LD50 Rat 5660 mg/kg

Dermal LD50 Rabbit 2700 mg/kg

Sodium octyl sulfate (142-31-4)

Oral LD50 Rat 3200 mg/kg

Water (7732-18-5)

Oral LD50 Rat >90 mL/kg

Ethyl alcohol (64-17-5)

Oral LD50 Rat 7060 mg/kg Inhalation LC50 Rat

124.7 mg/L 4 h Ethylene glycol

(107-21-1)

Oral LD50 Rat 4700 mg/kg

Dermal LD50 Rat 10600 mg/kg

Immediate Effects

Causes serious eye irritation.

Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

Causes serious eye irritation. Causes mild skin irritation.

Respiratory Sensitization

No information available for the product.

Dermal Sensitization

No information available for the product.

Component Carcinogenicity:

<u>Ethyl alcohol</u>	<u>64-17-5</u>
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans



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FOAM CONCENTRATE**

DFG:	Category 5 (low carcinogenic potency)
<u>Ethylene glycol</u>	<u>107-21-1</u>
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

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:

<u>Diethylene glycol butyl ether</u>	<u>112-34-5</u>
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
<u>Ethyl alcohol</u>	<u>64-17-5</u>
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
<u>Ethylene glycol</u>	<u>107-21-1</u>
Fish:	LC50 96 h Oncorhynchus mykiss 41000 mg/L; LC50 96 h Oncorhynchus mykiss 14 - 18 mL/L [static]; LC50 96 h Lepomis macrochirus 27540 mg/L [static]; LC50 96 h Oncorhynchus mykiss 40761 mg/L [static]; LC50 96 h Pimephales promelas 40000 - 60000 mg/L [static]; LC50 96 h Poecilia reticulata 16000 mg/L [static]



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

Algae:	EC50 96 h Pseudokirchneriella subcapitata 6500 - 13000 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 46300 mg/L IUCLID

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:

<u>Diethylene glycol butyl ether</u>	<u>112-34-5</u>
SARA 313:	1 % de minimis concentration (applies to R-(OCH ₂ CH ₂) _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>Ethylene glycol</u>	<u>107-21-1</u>
SARA 313:	1 % de minimis concentration



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

CERCLA:

5000 lb final RQ; 2270 kg final RQ

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 butyl ether	112-34-5	No	No	No	Yes	Yes
Water	7732-18-5	No	No	No	No	Yes
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes
Ethylene glycol	107-21-1	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):

WARNING! This product contains a chemical known to the state of California to cause cancer and/or reproductive/developmental effects:

<u>Ethyl alcohol</u>	<u>64-17-5</u>
Carc:	carcinogen , 4/29/2011 (in alcoholic beverages)
Repro/Dev. Tox	developmental toxicity , 10/1/1987 (in alcoholic beverages)
<u>Ethylene glycol</u>	<u>107-21-1</u>
Repro/Dev. Tox	developmental toxicity , 6/19/2015 (ingested)

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.

<u>Diethylene glycol butyl ether</u>	<u>112-34-5</u>
	1 %
<u>Ethyl alcohol</u>	<u>64-17-5</u>
	0.1 %
<u>Ethylene glycol</u>	<u>107-21-1</u>
	1 %



SAFETY DATA SHEET – ARCTIC™ U.S. TYPE 3 (3%) MIL SPEC AFFF FOAM CONCENTRATE

Component Analysis – Inventory:

Diethylene glycol butyl 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

Sodium octyl sulfate (142-31-4)

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	No	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

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

Ethylene glycol (107-21-1)

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

HMIS Rating

Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: 01-January-2016

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



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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.