



ARCTIC™ 3% AFFF FOAM CONCENTRATE

MATERIAL SAFETY DATA SHEET

Section 1: Chemical product and company identification

Product Name: ARCTIC™ 3% Aqueous Film Forming Foam
Synonym: ARCTIC 3% AFFF, 3% AFFF
Chemical Name: N/A This product is a mixture
C.A.S No.: N/A This product is a mixture
Chemical Formula: N/A This product is a mixture
EINECS Number: N/A This product is a mixture

Use of this product: The intended use of this product is as a fire extinguishing agent.

Company / Undertaking Identification:

Americas	Europe/Middle East/Africa	Asia-Pacific
The Solberg Company 1520 Brookfield Avenue Green Bay, WI 54313 United States	Solberg Scandinavian AS Radøyvegen 721 - Olsvollstranda N-5938 Sæbøvågen Norway	Solberg Asia Pacific Pty Ltd 3 Charles Street St. Marys NSW 2760 Australia
Tel: +1 920 593 9445	Tel: +47 56 34 97 00	Tel: +61 2 9673 5300
Telephone:	(920) 593-9445	
Emergency Contacts:	Chemtrec: (800) 424-9300 or (703) 527-3887	
Revised:	November 2014	

Section 2: Hazard identification and emergency overview

HMIS: Health 1, Flammability 0, Reactivity 0, PPE B

NFPA: Health 1, Flammability 0, Reactivity 0

WHMIS: D2B – may irritate eyes, skin, mucous membranes

Human Exposure:

Product:

EU Classification:	Xi	Irritant
R Phrases:	36	Irritating to eyes
S Phrases:	2	Keep out of reach of children
	24	Avoid contact with skin
	26	In case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice.

Components:

Diethylene Glycol Monobutyl Ether:

EU Classification	Xi	Irritant
R Phrases	36	Irritating to eyes



S Phrases	2	Keep out of reach of children
	24	Avoid skin contact
	26	In case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice

Limit Values for Exposure:

Diethylene Glycol Monobutyl Ether:

OSHA PEL (General Industry) 8 hour TWA: None established

MAK (DE) Limit Value: 100 mg/m³

Short term exposure limit value
(8 times, 5 minutes): 200mg/m³

Neither this product nor any of the ingredients contained in it have been listed as carcinogenic by the National Toxicology Program IARC, or OSHA. As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to chemical substances and ensure prompt removal from skin, eyes, and clothing

Signs and Symptoms:

Acute Exposure:

Eye Contact: May cause mild to moderate transient irritation

Skin Contact: May cause mild transient irritation and/or dermatitis

Inhalation: Not a normal route of entry

Ingestion: Irritating to mucous membranes

Chronic Overexposure: Possible systemic and motor disorders, diethylene glycol monobutyl ether did not interfere with reproduction; however, body weights of newborn animals were decreased.

Medical conditions generally aggravated by exposure: Diseases of the kidney and liver.

For Environment: As much as possible, keep from being washed into surface water.

Section 3: Composition/information on ingredients

Ingredient Name: Proprietary mixture consisting of fluorosurfactants, hydrocarbon surfactants, inorganic salts and water

Chemical Formula: N/A - This is a mixture

C.A.S. No.: N/A - This is a mixture

EINECS Number: N/A - This is a mixture

Concentration, Wt. %: >85%

Hazard Classification: See section 2

Ingredient Name: **Diethylene Glycol Monobutyl Ether (a)**

Chemical Formula: C₄H₉O(CH₂CH₂O)₂H

C.A.S. No.: 112-35-5

EINECS Number: 230-961-6

Concentration, Wt. %: 12%

Hazard Classification: See section 2

(a) This chemical is subject to reporting requirements of SARA Title III Section 313 and 40CFR Section 372



Section 4: First aid measures

Eye Exposure:	Irrigate eyes at eye wash station and repeat until pain free. Seek medical attention immediately.
Skin Exposure:	In case of contact, wash with plenty of soap and water. If irritation persists seek medical attention.
Inhalation:	If respiratory irritation or distress occurs remove victim to fresh air. Provide oxygen if breathing is difficult. Seek medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting. If victim is alert, give liquids such as milk or water. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory conditions.

Section 5: Firefighting measures

This product is an extinguishing media. No special protective equipment is required for fire fighters. Insensitive to mechanical impact or static discharge.

HMIS (hazardous materials identification system) rankings (as liquid):
health = 1, flammability = 0, reactivity = 0, personal protective equipment: eye and skin protection (see Section 8).

Section 6: Accidental release measures

For personal protection: Prevent skin and eye contact, see Heading 8
Clean up: Use an absorbent material, to include but not be limited to, diatomaceous earth, kitty litter, or saw dust, and sweep up. See Heading 12

Section 7: Handling and storage

Avoid eye, respiratory, and skin exposure. Use appropriate PPE (personal protective equipment) when handling, and wash thoroughly after handling (Section 8). Keep product in original container until packaging for use as extinguisher. Clean used equipment before storage. Use this product only in well ventilated areas. Do not mix with other extinguishing agents.

Section 8: Exposure controls/ personal protection

Respiratory protection:
None expected to be needed, mechanical ventilation is recommended

**Hand Protection:**

Use chemical resistant gloves when handling the product

Eye protection:

Chemical goggles are recommended

Skin protection:

Standard fire-fighting equipment should provide all necessary protection

Section 9: Physical and chemical properties

Appearance: Clear liquid slight straw color; mild sweet odor

Solubility: Completely soluble in water

Flammability: Non-flammable

Flash point: Does not flash

Vapor density (Air = 1): Not determined, but <1

Explosive properties: Not explosive

Oxidizing properties: Not an oxidizer

Relative density: About 1 (Water = 1)

pH: 7.0 to 8.5

Boiling point: ~ 220° F

Section 10: Stability and reactivity

Stability: stable

Incompatibles: Reactive metals, electrically energized equipment, any material reactive with water and strong oxidizers

Conditions to avoid: There are no known conditions which may cause a dangerous reaction.

Section 11: Toxicological Information

Product: The toxicity of the product mixture has not been determined

Components:**Diethylene Glycol Monobutyl Ether**

Toxicity Data:	Oral (rat) LD ₅₀	5,660 mg/kg	
	Oral (rat) LD ₅₀	9,626 mg/kg	(EINECS ESIS)
	Dermal (rabbit) LD ₅₀	4,000 mg/kg	
	Dermal (rabbit) LD ₅₀	2,764 mg/kg	(EINECS ESIS)
Irritation Data:	Eye (rabbit)	20 mg/day	Moderate (EINECS ESIS)
	Eye (rabbit)	Highly irritating	(EINECS ESIS)
	Skin (rabbit)	1000 mg/kg/day	Moderate with edema, fissuring, leathery appearance (EINECS ESIS)

Target organs: Kidney, blood, liver, lungs, gastrointestinal, spleen



Section 12: Ecological information

Ecotoxicity:

Components:

Diethylene Glycol Monobutyl Ether

Fish	Lepomis macrochirus: LC ₅₀ (96 hrs.)	1,300 mg/L
	Carassius auratus: LC ₅₀ (24 hrs.)	2,700 mg/L
Daphnids, Daphnia magna:	EC ₅₀ 24 hrs.)	3,184 mg/L
Algae, Scenedesmus subspicatus:	EC ₅₀ (96 hrs.)	>100 mg/L

Mobility

Diethylene Glycol Monobutyl Ether

Should not partition from a water column to organic matter contained in sediments and suspended solids.

Persistence/ Degradability:

Diethylene glycol monobutyl ether:

Indirect photodegradation is about 50% in 3.5 hours

Aerobic degradation with adapted activated sludge is 60% after 28 days

COD = 2080 mg/g of substance

BOD₅ = 250 mg O₂/g substance

Theoretical oxygen demand = 2.17 mg/mg

Bioaccumulation:

Diethylene glycol monobutyl ether:

Should not bioaccumulate.

Section 13: Disposal considerations

As much as possible, keep from being washed into surface water, see Heading 12. Dispose of in compliance with national, regional, and local provisions that may be in force.

Section 14: Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT, IMO, IATA, RID/ADR, or Canada's TDG

Section 15: Regulatory information

Product:

EU Classification:	Xi	Irritant
R Phrases:	36	Irritating to eyes
S Phrases:	2	Keep out of reach of children
	24	Avoid contact with skin
	26	In case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice.



Limit Values for Exposure:

Diethylene Glycol Monobutyl Ether:

OSHA PEL (General Industry) 8 hour TWA: None established

MAK (DE) Limit Value: 100 mg/m³

Short term exposure limit value

(8 times, 5 minutes): 200mg/m³

State regulatory information:

Chemicals in this product under specific State regulations, as denoted below:

California - Permissible Exposure Limits for Chemical Contaminants:

Florida – Substance List: None

Massachusetts - Substance List: None

Minnesota - List of Hazardous Substances: None

New Jersey - Right to Know Hazardous Substance List: None

Pennsylvania: Hazardous Substance List: None California Proposition 65: No component is listed on the California Proposition 65 list or the No Significant Risk Level List.

Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the 2003 ANSI Z400.1 format.

The information herein is given in good faith to be correct but does not claim to be all inclusive and shall be used only as a guide. Solberg or Amerex Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Date Prepared: 03 November, 2014

Supersedes: Feb, 2012