



# 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/m<sup>3</sup>

Short term exposure limit value

(8 times, 5 minutes): 200mg/m<sup>3</sup>

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, diethethylene 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.

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**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:** C<sub>4</sub>H<sub>9</sub>O(CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>H

**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

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#### **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.

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#### **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).

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#### **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

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#### **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.

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#### **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

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**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

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**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.

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**Section 11: Toxicological Information**

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

**Components:****Diethylene Glycol Monobutyl Ether**

<b>Toxicity Data:</b>	Oral (rat) LD <sub>50</sub>	5,660 mg/kg	
	Oral (rat) LD <sub>50</sub>	9,626 mg/kg	(EINECS ESIS)
	Dermal (rabbit) LD <sub>50</sub>	4,000 mg/kg	
	Dermal (rabbit) LD <sub>50</sub>	2,764 mg/kg	(EINECS ESIS)
<b>Irritation Data:</b>	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

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## Section 12: Ecological information

### Ecotoxicity:

#### Components:

##### Diethylene Glycol Monobutyl Ether

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

BOD<sub>5</sub> = 250 mg O<sub>2</sub>/g substance

Theoretical oxygen demand = 2.17 mg/mg

### Bioaccumulation:

#### Diethylene glycol monobutyl ether:

Should not bioaccumulate.

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## 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.

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## 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

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## 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/m<sup>3</sup>  
Short term exposure limit value  
(8 times, 5 minutes): 200mg/m<sup>3</sup>

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.

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**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.

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Date Prepared: 03 November, 2014  
Supersedes: Feb, 2012