MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	AFFF Foam Concentrate
Synonym:	Aqueous Film Forming Foam AFFF Concentrate
Manufacturer:	AMEREX CORPORATION
Internet Address:	www.amerex-fire.com
Address:	7595 Gadsden Highway P.O. Box 81 Trussville, AL 35173-0081
Telephone:	(205) 655-3271
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised:	May, 2006

Section 2. Hazard identification and emergency overview

Emergency overview: Clear, medium green liquid, water-based, detergent odor.

Adverse health effects and symptoms: Irritating to the eyes, respiratory system, and skin. Symptoms may include principally eye pain, also sore throat, coughing, and difficult breathing if inhaled, skin redness after prolonged exposure. Central nervous system and kidney effects may occur upon repeated inhalation or ingestion.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Water	None	None	None
Diethylene glycol monobutyl ether	Not established	Not Established	100 mg/m^3 8 hr. TWA 200 mg/m^3 5 min. STEL
Synthetic detergents	Not established	Not established	Not established
Fluoroalkyl surfactants	Not established	Not established	Not established

*German regulatory limits

Hazard symbols:
WHMIS (hazardous materials identification system)

D2B – Product is an irritant

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Water	> 90 %	7732-18-5
Diethylene Glycol Monobutyl Ether	< 2 %	112-34-5
Synthetic detergents	Unknown	Proprietary ingredients
Fluoroalkyl surfactants	Unknown	Proprietary ingredients

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station and repeat, retracting eyelids often, until pain free. Seek medical attention immediately.

Skin Exposure: In case of contact, wash with plenty of soap and water. Launder clothing before reuse. Multiple minor exposures are worse than few large exposures.

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. Dilute with 4 – 6 cups of water or milk. 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: contact with product may aggravate existing skin or eye conditions.

Section 5. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent. Product forms foam when mixed under pressure with water.

Unusual fire/explosion hazards: avoid contact with water-reactive materials, burning metals, and electrically charged equipment. (see Section 10).

Insensitive to mechanical impact or static discharge.

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

Section 6. Accidental release measures

Large spills (one drum or more) should be addressed by hazardous materials technicians following a site-specific emergency response plan and trained in the appropriate use of PPE. Clean up released material using sorbent socks for containment, followed by sorbent material inside containment. Wear appropriate APR for glycol ethers, or if concentration is unknown use supplied air (Section 8). Bag and drum for disposal. If product is used and/or contaminated, for example if mixed with fuel, use PPE and containment appropriate to the nature of the mixture. Prevent undiluted product from entering storm sewer. Handle and dispose of as a hazardous waste unless testing indicates otherwise. Decontaminate with detergent and water.

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). Launder exposed clothing before reuse. Keep product in original container until use by trained personnel. Clean used equipment with soap and water before storage. Use this product only in well ventilated areas. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use air-purifying respirator (APR) or powered air-purifying respirator (PAPR) with organic vapor cartridges or universal cartridges for low or short-

term exposure, otherwise use positive pressure supplied air respirators (SAR) or self contained breathing apparatus (SCBA).

Eye protection: wear chemical goggles or full face shield.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling product.

Section 9. Physical and chemical properties

Appearance: Clear, medium green liquid; detergent odor
Specific gravity: ~ 1.0
Solubility: soluble in water
Non – flammable
Flash point: not applicable
Vapor pressure: <10 mm Hg @ room temperature
Vapor density (air = 1): slightly greater than 1
pH: approximately 7.6
Boiling point: ~260^{o} F
No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable under conditions of normal use.

Incompatibles: strong acids, alkalis, and strong oxidizers at high temperature.
Decomposition products: heat of fire may release carbon monoxide, carbon dioxide.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: 2-(2-butoxyethoxy)-ethanol (diethylene glycol monobutyl ether):
oral rat LD_{50}: 5660 mg/kg body weight,
skin rabbit LD_{50}: 2700 mg/kg body weight,
eye irritation rabbit standard Draize test: 20 mg severe

Target organs in man: eyes, CNS, kidneys. No information was found indicating the product causes sensitization.

Chronic toxicity: Diethylene glycol monobutyl ether is known to cause chronic skin and eye irritation after repeated low doses. It is not designated by the National Toxicology Program (NTP) or International Agency for Research on Cancer(IARC) as a known or anticipated carcinogen.

Reproductive toxicity: The German MAK commission lists this compound at the lowest, or Group C level, indicating no risk of damage to an embryo or fetus.

Section 12. Ecological information

Ecotoxicity: LC_{50}/96 hour values for fish are over 100mg/l for 2-(2-butoxyethoxy)-ethanol; weak environmental toxin.

Persistence/ Degradability: log K_{ow} = 0.56 for diethylene glycol monobutyl ether: rapid photolytic degradation in air: half life < one day: low evaporation rate and water solubility will allow this material to leach into groundwater from a surface release with moderate biodegradation.

Bioaccummulation: limited

Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations. Do not flush to waterways, and seek prior approval before discharging into a sewer treatment system, due to BOD load and foaming tendency. Contact National Foam's Risk Management Administrator at (610) 363-1400 for information on disposal of used drums and approved disposal facilities.

Section 14. Transportation information

Proper shipping name: Fire extinguisher charges or compounds N.O.I., class 60. 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. The National motor freight code is 69160 Sub 0.

Section 15. Regulatory information

International Inventory Status
Contains ingredients on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	203-961-6
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	ECL	Yes

European Risk and Safety phrases:

EU Classification:	Xi.	Irritant
R Phrases:	36	Irritating to eyes.
S Phrases:	24	Avoid contact with skin
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

U.S. federal regulatory information:

Glycol ethers are on the EPCRA Community Right-to-Know List, and are under SARA Section 313 and CERCLA reporting requirements. They do not have SARA threshold planning quantities (TPQs) or reportable quantities (RQs).

State regulatory information: Diethylene glycol monobutyl ether is on Pennsylvania's Right-to-Know Hazardous Substance List when present at concentrations over 1%.

California Proposition 65: No component is listed on the California Proposition 65 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.

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