MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	AFFF 2% 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:	August, 2003

Section 2. Hazard identification and emergency overview

Emergency overview: Clear, light amber liquid, water-based, odorless.

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 effects may occur upon inhalation or ingestion.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Water	None	None	None
2-(2-Butoxyethoxy)ethanol	Not established	Not Established	100 mg/m^3 8 hr. TWA 200 mg/m^3 5 min. STEL
Triethanolamine	Not established	5 mg/m^3 8 hr. TWA	Not established
Methyl-1 H-benzotriazole	Not established	Not established	Not established
Alkyl sulfate salts	Not established	Not established	Not established
Fluoroalkylamide	Not established	Not established	Not established
Perfluoroalkyl sulfonate salts	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	69 –71	7732-18-5
2-(2-Butoxyethoxy)ethanol	19 –21	112-34-5
Triethanolamine	0.5 – 1.5	102-71-6
Methyl-1 H-benzotriazole	<1	29385-43-1
Alkyl sulfate salts, Fluoroalkylamide, and Perfluoroalkyl sulfonate salts	Balance	Proprietary

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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.
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: Induce vomiting as directed by medical personnel, and only if victim is conscious. Dilute with 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. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent

Unusual fire/explosion hazards: in a fire this material may decompose, releasing oxides of sulfur, carbon, nitrogen, and hydrogen cyanide, hydrogen fluoride, and ammonia (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 amines/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 material 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). 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 and amine 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.

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, light amber liquid; oderless
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): ~1
pH: approximately 8.5 for 1% solution
Boiling point: ~260^{o} F
No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong acids, alkalis, and strong oxidizers
Decomposition products: heat of fire may release carbon monoxide, carbon dioxide, nitrogen and sulfur oxides, and hydrogen fluoride

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: 2-(2-butoxyethoxy)-ethanol: 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, respiratory system, skin. This product is an extreme eye irritant. No information was found indicating the product causes sensitization.

Triethanolamine: oral rabbit LD_{50}: 2200 mg/kg body weight

Chronic toxicity: This product's ingredients are not considered as "probable" or "suspected" carcinogens by OSHA or ACGIH. The IARC has rated triethanolamine (~1% of product) as a group 3 carcinogen: not classifiable as to carcinogenicity to humans.

Reproductive toxicity: This product's ingredients do not have reproductive or teratogenic effects at DFG MAK exposure levels.

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} <3 for 2-(2-butoxyethoxy)-ethanol: 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: extent unknown

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.

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

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	Yes
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	KECL	Yes

European Risk and Safety phrases:

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

U.S. federal regulatory information:

None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs).

State regulatory information:

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

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: None
Texas – Hazardous Substance List: No
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

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 proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made.

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