



## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product identifier:** TRIDOL S 1% AFFF

**CAS #:** Mixture, no single CAS number is available

**Product use:** Fire fighting foam concentrate

**Product description:** Hydrocarbon surfactants, fluorocarbon surfactants and glycol solvent

**Supplier name and address:**

Angus Fire  
150 Gordon Drive · P.O. Box 695  
Exton, PA 19341 USA  
Phone: (610) 363-1400 · Fax: (610) 524-9073  
[www.angusfire.com](http://www.angusfire.com)

**Emergency Telephone #:** 1-800-334-3156

### SECTION 2 - CHEMICAL COMPOSITION/HAZARDOUS INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>LD50 mg/kg (rat, oral)</u>	<u>LC50 ppm (rat, ihl)</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Diethylene glycol monobutyl ether	112-34-5	15-40	5660	N/Av	N/Av	N/Av
Alkyl dimethylamine oxides	N/Av	5-10	N/Av	N/Av	N/Av	N/Av
Magnesium sulfate	7487-88-9	1-5	N/Av	N/Av	N/Av	N/Av
Ethylene glycol	107-21-1	10-20	5890	N/Av	50 ppm	100 mg/m <sup>3</sup>
Fluorosurfactants	N/Av	10-30	N/Av	N/Av	N/Av	N/Av
Water	7732-18-5	Balance	190 gm/kg	N/Av	None	None

### SECTION 3 - HAZARD IDENTIFICATION

\*\*\*POTENTIAL HEALTH EFFECTS\*\*\*

**Target organs:** Skin, eyes

**Signs and symptoms of short-term (acute) exposure:**

*Inhalation:* Inhalation of vapours may cause nasal irritation

*Skin contact:* Can cause moderate skin irritation

*Eye contact:* Can cause moderate eye irritation

*Ingestion:* It is not likely that this product will be swallowed if used as intended. It may cause nausea and vomiting if swallowed.

**Effects of long-term (chronic) exposure:**

There is evidence from animal studies that ethylene glycol may have embryotoxic or teratogenic effects.

**Other important hazards:** None

#### SECTION 4 - FIRST AID MEASURES

- Inhalation:** If someone feels ill after inhaling vapours, remove them to fresh air. Call a physician if symptoms do not go away quickly.
- Skin contact:** If product gets on skin, wash off with large amounts of water
- Eye contact:** If liquid is splashed in eyes, immediately flush eyes with lots of water for 15 minutes, including under the eyelids. Call a physician right away.
- Ingestion:** If swallowed, call a physician or Poison Control Centre. DO NOT induce vomiting unless directed to do so by a physician. If vomiting does occur, position victim so that fluid does not drain back into lungs.

#### SECTION 5 - FIRE FIGHTING MEASURES

- Fire hazards/conditions of flammability:** Not flammable under normal conditions of use.
- Flash point (Method):** >208°F (98°C) (Pensky Martens Closed Cup)
- Lower/Upper flammable limit (% by volume):** Product is not flammable.
- Explosion data:**
- Sensitivity to mechanical impact:* Not sensitive to mechanical impact.
  - Sensitivity to static discharge:* Not sensitive to static discharge at temperatures below the flash point.
- Oxidizing properties:** Product is not an oxidizer
- Auto-ignition temperature:** N/Av
- Suitable extinguishing media:** Not applicable.
- Special fire-fighting procedures/equipment:** Not applicable.
- Hazardous combustion products:** Not applicable.

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions:** Wear appropriate protective equipment (see Section 8).
- Environmental precautions:** If in doubt about proper disposal, contact local, state or federal EPA (in USA) or municipal or provincial environmental authorities (in Canada).
- Spill response/Cleanup:** Wear appropriate protective equipment to collect spillage with an absorbent material. Flush area with water until foaming ceases, using caution as area may be slippery. Prevent discharge of concentrate into waterways. Obtain prior approval before discharge into sewer treatment systems. Disposal must be in accordance with federal, state or provincial, and local regulations.
- Prohibited materials:** None.

#### SECTION 7 - HANDLING AND STORAGE

- Safe handling procedures:** Product is for industrial and municipal fire department use only. Consult product literature for appropriate handling during fires.
- Storage requirements:** Store at 25°F - 120°F (-4°C - 49°C).
- Incompatible materials:** As with all aqueous solutions, TRIDOL should not be put in contact with any materials which react violently with water.
- Special packaging materials:** Use original container or store in stainless steel, fibreglass or bitumen-lined tanks.

## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

<b>Ventilation and engineering controls:</b>	Provide adequate levels of ventilation to prevent a build-up of vapours from the product.
<b>Respiratory protection:</b>	Not normally required under normal conditions of use. If vapours reach irritating levels, wear a NIOSH-approved respirator equipped with organic vapour cartridges.
<b>Protective gloves:</b>	Wear impervious gloves of an approved material, for example Neoprene.
<b>Eye protection:</b>	Wear safety glasses, chemical goggles or a face shield of an approved type.
<b>Other protective equipment:</b>	Body-covering clothing is recommended.
<b>Permissible exposure levels:</b>	See Section 2, Hazardous Ingredients.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical form, color and odor:</b>	Clear pale yellow liquid, with a sweet odor
<b>Odor threshold:</b>	0.8 ppm - 25 ppm for ethylene glycol
<b>pH @ 68°F (20°C):</b>	6.5 - 8
<b>Boiling point:</b>	212°F (100°C)
<b>Melting/freezing point:</b>	2°F (-17°C)
<b>Vapour pressure:</b>	0.007 kPa (0.05 mm Hg) at 20°C; 0.027 kPa (0.20 mm Hg) at 30°C for ethylene glycol
<b>Solubility in water:</b>	100%
<b>Coefficient of oil/water distribution:</b>	Log P(oct) = -1.93 for ethylene glycol
<b>Specific gravity (water = 1):</b>	1.06
<b>Vapour density:</b>	2.41 for ethylene glycol
<b>Volatile organic compounds (VOC's):</b>	Not available
<b>Evaporation rate:</b>	Not available

## SECTION 10 - REACTIVITY AND STABILITY DATA

<b>Stability and reactivity:</b>	Stable. Hazardous polymerization will not occur.
<b>Conditions to avoid:</b>	None known.
<b>Materials to avoid:</b>	Contact with chemicals that react violently on contact with water, such as sodium metal.
<b>Hazardous decomposition products:</b>	None known.

## SECTION 11 - TOXICOLOGICAL INFORMATION/HEALTH EFFECTS

<b>LD<sub>50</sub>:</b>	Not available
<b>LC<sub>50</sub>:</b>	Not available
<b>Routes of exposure:</b>	Skin, eyes
<b>Carcinogenicity:</b>	No ingredient classed as carcinogenic by OSHA, IARC, ACGIH or NTP
<b>Teratogenicity, mutagenicity, other reproductive effects:</b>	None known.
<b>Sensitization to material:</b>	Product is not known to cause allergies.
<b>Conditions aggravated by exposure:</b>	None known.
<b>Synergistic materials:</b>	None known.

## SECTION 12 - ECOLOGICAL INFORMATION

**Environmental effects:** Readily biodegradable. Product is expected to have a relatively low risk to the environment.

**Important environmental characteristics:** None known.

**Chemical Oxygen Demand:** COD: 945,000 mg/L

**Biochemical Oxygen Demand:** 5 Day BOD: 419,000mg/l (44%)

**Aquatic toxicity:** Not available.

## SECTION 13 - WASTE DISPOSAL

**Handling for disposal:** Avoid contact with eyes and skin, and excessive inhalation. Do not ingest. Rinse skin and eyes thoroughly in case of contact.

**Methods of disposal:** If in doubt about proper disposal, contact local, state or federal EPA (in USA) or municipal or provincial environmental authorities (in Canada).

## SECTION 14 - TRANSPORT INFORMATION

**Transportation of Dangerous Goods (TDG) information:**

*Shipping description:* Not regulated as dangerous goods according to TDG Regulations.

**49 CFR information:**

*Shipping description:* Not regulated as hazardous material according to 49 CFR Hazardous Materials Regulations.

**International Dangerous Goods information:**

*IMO:* Not regulated as dangerous goods according to IMDG Code.

*ICAO:* Not regulated as dangerous goods according to ICAO Technical Instructions or IATA Regulations.

**Other information:** None.

## SECTION 15 - REGULATORY INFORMATION

**WHMIS information:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR. WHMIS classification is D2A, Toxic and Infectious Substances, Very Toxic Material, and D2B, Toxic and Infectious Substances, Toxic Material.

**CEPA information:** All ingredients are listed on the DSL.

**SARA information:** This product contains Diethylene glycol monobutyl ether and Ethylene glycol SARA Title III Section 313 chemicals.

**TSCA information:** All ingredients are listed in TSCA

**RCRA information:** Not a regulated waste

**CERCLA information:** Under U.S. EPA CERCLA regulations, releases to air, land or water which exceed the reportable quantity must be reported to the National Response Center (1-800-424-8802). There is no reportable quantity (RQ) for this product. There are no reportable materials in this product.

## SECTION 16 - OTHER INFORMATION

**Prepared for:** Angus Fire

**Telephone number:** (610) 363-1400

**Preparation date/revision number:** August 7, 2002, rev. 2

**Additional notes or references:**

## Abbreviations:

ACGIH:	American Conference of Governmental Industrial Hygienists
CEPA:	Canadian Environmental Protection Act
CERCLA:	Comprehensive Environmental Response Compensation and Liability Act
DOT:	Department of Transport
DSL:	Domestic Substance List
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
ICAO:	International Civil Aviation Organization
IMDG:	International Maritime Dangerous Goods Code
OSHA:	Occupational Safety and Health Administration
N/Ap	Not applicable
N/Av:	Not available
NIOSH:	National Institute for Occupational Safety and Health
NTP:	National Toxicology Program
RCRA:	Resource Conservation and Recovery Act
TSCA:	Toxic Substances Control Act
WHMIS:	Workplace Hazardous Materials Information System

## References:

1. Van Nostrand Reinhold, Dangerous Properties of Industrial Materials, Seventh Edition, N. Irving Sax.
  2. Canadian Centre for Occupational Health and Safety. RTECS (Registry of Toxic Effects) and CHEMINFO databases.
  3. ACGIH, Threshold Limit Values and Biological Exposure Indices for 1997.
  4. International Agency for Research on Cancer Monographs.
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