MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

1.1 Product Identification
FOREXPAN S 0.1-1%

1.2 Application and Use
Fire Fighting Foam Concentrate.

1.3 Manufacturer/Supplier
Angus Fire*, Thame Park Road, Thame, Oxfordshire, OX9 3RT
Telephone: (01844) 265000 Fax: (01844) 265156

Emergency Telephone Number (24 hours)
For information and supply: Angus Fire (015242) 61166

*(Angus Fire is a trading brand of Kidde Products Ltd, registered in England No. 462271)

1.4 Product Description
Hydrocarbon surfactants, glycol solvent and foam stabiliser.

2. COMPOSITION

<table>
<thead>
<tr>
<th>Substance</th>
<th>Synonyms</th>
<th>Concentration %</th>
<th>Health class</th>
<th>Cas-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di-ethylene glycol monobutyl ether</td>
<td>2-(2-Butoxyethoxy) ethanol</td>
<td>15 - 40</td>
<td>X, R36</td>
<td>112-34-5</td>
</tr>
<tr>
<td>Primary alcohol ether sulphate</td>
<td></td>
<td>10 - 35</td>
<td>X, R38,41</td>
<td>68585-34-2</td>
</tr>
<tr>
<td>Sulphosuccinate</td>
<td></td>
<td>5 - 15</td>
<td>X, R36,52,53</td>
<td></td>
</tr>
<tr>
<td>Di-propylene glycol monomethyl ether</td>
<td>(2-Methoxy methylethoxy) propanol</td>
<td>5 - 15</td>
<td>X, R36</td>
<td>34590-94-8</td>
</tr>
<tr>
<td>Primary alcohol blend</td>
<td></td>
<td>&lt; 5</td>
<td>N, R50</td>
<td></td>
</tr>
<tr>
<td>Corrosion inhibitor</td>
<td></td>
<td>&lt; 1</td>
<td>F, R10, T, R24,25</td>
<td>R36,38</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Human health hazards: Irritating to the skin. Risk of serious damage to the eyes.

4. FIRST AID MEASURES

4.1 General
First aiders should know and take the precautions appropriate to avoid danger to themselves and the casualty.

Take casualty together with material safety data sheet of this product to hospital or doctor, if necessary.

First Aid - Skin: Remove contaminated clothing. If there is skin contact, wash immediately with plenty of clean, gently flowing water. If persistent irritation occurs, obtain medical attention.

First Aid - Eye: If there is eye contact, wash immediately with plenty of clean, gently flowing water for 10 minutes.

First Aid - Ingestion: If ingestion is suspected, do not induce vomiting. Send casualty to hospital immediately.

First Aid - Inhalation: Remove casualty from exposure. If there is breathing difficulty or cough, keep patient at rest seated in
position of maximum comfort.

5. FIRE FIGHTING MEASURES

**General Hazards**  
Fire fighting measures are not applicable as Forexpan S 0.1-1% is a fire extinguishing medium. If product containers are involved in fire, then a suitable extinguishing agent should be applied.

6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Personal precautions:</th>
<th>Avoid contact with skin, eyes and clothing. Do not breathe mists, aerosols.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal protection:</td>
<td>Wear protective clothing specified for normal operations.</td>
</tr>
<tr>
<td>Environmental precautions:</td>
<td>SPILLAGE: The practice of washing spills into drains should be avoided if at all possible and should under no circumstances be allowed without first consulting the local Water Authority and the Environment Agency.</td>
</tr>
<tr>
<td>Clean-up methods - small spillage:</td>
<td>Absorb or contain liquid with sand, earth or spill control material. Shovel up and place in a labelled, sealable container for subsequent safe disposal.</td>
</tr>
</tbody>
</table>

7. HANDLING AND STORAGE

No special handling techniques required. For best results, the product should be stored in sealed, original containers above -10°C and below 40°C. Freezing and thawing do not affect the substance properties but care must be taken to avoid freezing the container and its contents since the expansion of the container contents may cause cracking of a completely rigid container as ice forms.

**Angus Protective Equipment - Fire Fighting**

Angus Fire Foam Concentrates will be used by professional fire-fighters to control and extinguish flammable liquid fires. The nature of this process may involve exposure to heat, flame and possibly toxic vapours and fumes. It is normal procedure to wear appropriately designed personal protective equipment designed for use in firefighting situations.

Angus Fire advises that this form of personal protective equipment should be used if the packaging materials become involved in fire.

8. EXPOSURE CONTROL/PERSOAL PROTECTION

**Engineering control measures:** Use only in well ventilated areas

**Occupational Exposure Limit:**

**Personal Protective Equipment - Other Handling**

Avoid prolonged, extensive or repeated inhalation or contact to eyes and skin.

**Hand Protection** Wear impervious gloves of an approved type (e.g. neoprene).

**Eye Protection** Wear safety goggles of an approved type (BS 2092).

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>Clear pale yellow</td>
</tr>
<tr>
<td>Odour:</td>
<td>Organic</td>
</tr>
<tr>
<td>pH at 20°C:</td>
<td>6-8</td>
</tr>
<tr>
<td>Boiling point:</td>
<td>100°C at 760mm Hg</td>
</tr>
<tr>
<td>Freeze Point:</td>
<td>-13°C</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>&gt;95°C</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Miscible with water in all proportions</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>1.04</td>
</tr>
</tbody>
</table>
10. STABILITY/REACTIVITY

Stability
Generally stable. As with all aqueous solutions Forexpan S 0.1-1% should be excluded from contact with any materials which have violent reactions with water.

Hazardous Decomposition Products
Do not expose containers to heat or flame, since the containers are made from high density polyethylene and will burn. Thermal decomposition of containers and/or products may generate acrid smoke and fumes and traces of Na₂O, Cl⁻, SOₓ, NOₓ.

11. TOXICOLOGICAL INFORMATION

Inhalation
Inhalation of hazardous amounts is unlikely when used as intended. Is irritant to respiratory tract when inhaled.

Ingestion
Low oral risk when used as intended. May cause nausea, vomiting and diarrhoea when ingested.

Contact to eyes or skin
Low risk if appropriate precaution measures are taken (see section 6). Can cause eye damage and skin irritation when in contact with eyes or skin.

Aquatoxicity
Rainbow Trout
LC₅₀ (96hrs) 10.4 ppm

12. ECOLOGICAL INFORMATION

Persistence/degradability: Biodegradable.
Bioaccumulation: Bioaccumulation is unlikely to occur due to metabolism and excretion.

Biodegradation
Biodegradable: COD 980000 mg/l⁻¹
BOD (5 day) 200000 mg/l⁻¹ (20.4%)
BOD (25 day) (>90%)

Sewage treatment: Data not available.

13. DISPOSAL CONSIDERATIONS

Disposal
Waste should be disposed via local authority waste collection service or registered waste carrier. Ensure the destination is a licensed facility.

Local legislation:
Control of Pollution Act 1974
Hazardous Waste Regulations 2005
Environmental Protection Act 1990
14. TRANSPORT INFORMATION

Label for conveyance: No Transport Warning Sign Required

Road:
UN No: N/C

Rail:
Rail Transport Class No: N/C

Sea:
Sea Transport Class No: N/C
MFAG Table No: N/C
EmS No: N/C

Air:
Air Transport Class No: N/C

15. REGULATORY INFORMATION

Label For Supply: Irritant

Risk Phrases: R-38,41,52/53
Irritating to the skin. Risk of serious damage to eyes. Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Safety Phrases: S-26,28,37,39,61
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Wear suitable gloves. Wear eye/face protection. Avoid release to the environment.

UK Regulatory References:
Health and Safety at work Act 1974.
Statutory Instruments: Chemicals (Hazard Information and Packaging for Supply) Regulations.
Approved Code of Practice:
Classification and Labelling of Substances and Preparations Dangerous for Supply.
Guidance Notes: Occupational Exposure Limits EH40/96.
16. OTHER INFORMATION

Uses and restrictions:

Sources of Information
Health & Safety Executive: Occupational Exposure Limits (EH 40/96).
Note: EH40 is revised on an annual basis and newest issue should be applied.

Stillmeadow Inc. Beak Consultants.

Other information:

DISCLAIMER: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.