SAFETY DATA SHEET

Based on Regulation (EC) No 1907/2006 (REACH) Article 31 and Annex II

SOLBERG FIRE-BRAKE 3150A CLASS A FOAM

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name : SOLBERG FIRE-BRAKE 3150A CLASS A FOAM
Synonyms : FIRE-BRAKE CLASS A FOAM; FIRE-BRAKE

CAS No. : N.A.
EC index No. : N.A.
EINECS No. : N.A.
RTECS No. : N.A.

NFPA code : N.D.
Molecular weight : N.A.
Formula : N.A.

1.2 Use of the substance/preparation:

Fire extinguishing medium: concentrate

1.3 Company/undertaking identification:

SOLBERG SCANDINAVIAN AS - NORWAY
Olsvollstranda
NO-5938 Sæbøvågen
Tel: +47 56 34 97 00
Fax: +47 56 34 97 01
e-mail address: Luc@arcticfoam.com

1.4 Emergency telephone:

+47 97 64 00 00 (24h/24h)
SOLBERG SCANDINAVIAN AS - NORWAY

2. Hazards identification

- Irritating to eyes

3. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS/ELINCS No.	Conc. (%)	Hazards (R-phrases)	Hazard symbol
2-(2-butoxyethoxy)ethanol	112-34-5 203-961-6	<20	36 (1)(2)	Xi
tris(2-hydroxyethyl)ammonium dodecylsulfate	139-96-8 205-388-7	<20	36/38 (1)	Xi
alpha-sulfo-omega-hydroxy-poly(oxy-1,2-ethanediyl), C9-11 alkyl ethers, sodium salts	96130-61-9	5-10	38-41 (1)	Xi
1-propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0 263-058-8	<20	36 (1)	Xi
1-propanaminium, N-(3-aminopropyl)-2-hydroxy-N,N-dimethyl-3-sulfo-, N-coco acyl derivs., hydroxides, inner salts	68139-30-0 268-761-3	<20	36/38-51/53 (1)	Xi;N

(1) For R-phrases in full: see heading 16
(2) Substance with a Community workplace exposure limit
(3) PBT-substance

4. First aid measures

4.1 After inhalation:
- Remove the victim into fresh air
- Respiratory problems: consult a doctor/medical service

4.2 Skin contact:
- Rinse with water
- Soap may be used
- Take victim to a doctor if irritation persists

4.3 Eye contact:
- Rinse immediately with plenty of water
- Take victim to an ophthalmologist if irritation persists

4.4 After ingestion:
- Rinse mouth with water
- Immediately give lots of water to drink
- Consult a doctor/medical service if you feel unwell

5. Fire-fighting measures

5.1 Suitable extinguishing media:
- Non combustible
- For surrounding fires: all extinguishing media allowed

5.2 Unsuitable extinguishing media:
- No data available

5.3 Special exposure hazards:
- On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide)

5.4 Instructions:
- Dilute toxic gases with water spray
- Take account of environmentally hazardous firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for fire-fighters:
- Heat/fire exposure: compressed air/oxygen apparatus
- Protective clothing

6. Accidental release measures

6.1 Personal precautions:
See heading 8.2/13

6.2 Environmental precautions:
- Prevent soil and water pollution
- Prevent spreading in sewers
- Contain released substance, pump into suitable containers
- Plug the leak, cut off the supply
- Dam up the liquid spill

6.3 Methods for cleaning up:
- Take up liquid spill into inert absorbent material, e.g.: sand/earth
- Scoop absorbed substance into closing containers
- Carefully collect the spill/leftovers
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:
- Observe normal hygiene standards
- Do not discharge the waste into the drain

7.2 Storage:
- Keep container in a well-ventilated place
- Provide for a tub to collect spills
- Meet the legal requirements
- Keep away from: heat sources

Storage temperature	: 0/50	**°C**
Quantity limits	: N.D.	**kg**
Storage life	: N.D.	**days**
Materials for packaging	:	
- suitable	: no data available	
- to avoid	: no data available	

7.3 Specific use(s):
- See information supplied by the manufacturer for the identified use(s)

8. Exposure controls/Personal protection

8.1 Exposure limit values:

8.1.1 Occupational exposure:

2-(2-butoxyethoxy)ethanol

TLV-TWA	:	**mg/m³**		**ppm**
TLV-STEL	:	**mg/m³**		**ppm**
WEL-LTEL	: 67.5	**mg/m³**	10	**ppm**
WEL-STEL	: 101.2	**mg/m³**	15	**ppm**
TRGS 900	: 100	**mg/m³**		**ppm**
MAK	: 100	**mg/m³**		**ppm**
MAC-TGG 8 h	: 50	**mg/m³**		
MAC-TGG 15 min.	: 100	**mg/m³**		
VME-8 h	: 67.5	**mg/m³**	10	**ppm**
VLE-15 min.	: 101.2	**mg/m³**	15	**ppm**
GWBB-8 h	: 67.5	**mg/m³**	10	**ppm**
GWK-15 min.	: 101.2	**mg/m³**	15	**ppm**
EC	: 67.5	**mg/m³**	10	**ppm**
EC-STEL	: 101.2	**mg/m³**	15	**ppm**

8.1.2 Sampling methods:
- Sulfites, & Sulfates — NIOSH 6004

8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

Personal protective equipment:

a) Respiratory protection:
- Wear gas mask with filter type A if conc. in air > exposure limit

b) Hand protection:
- Gloves
  Suitable materials: Butyl rubber

- Breakthrough time: N.D.

c) Eye protection:
- Safety glasses

d) Skin protection:
- Protective clothing
  Suitable materials: Butyl rubber

8.2.2 Environmental exposure controls: see headings 6.2, 6.3 and 13

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	: Liquid	
Odour	: Mild	
Colour	: Light yellow	

9.2 Important health, safety and environmental information:

pH value (at 100%)	: 7/8.5	
Boiling point/boiling range	: 100	**°C**
Flash point/flammability	: N.A.	**°C**
Explosion limits (explosive properties)	: N.D.	**vol%**
Oxidising properties	: N.D.	
Vapour pressure (at 20°C)	: N.D.	**hPa**
Vapour pressure (at 50°C)	: N.D.	**hPa**
Relative density (at 20°C)	: 1.01	
Water solubility	: COMPLETELY	
Soluble in	: No data available	
Relative vapour density	: N.D.	
Viscosity (at 25°C)	: <0.003	**Pa.s**
Partition coefficient n-octanol/water	: N.D.	
Evaporation rate		
ratio to butyl acetate	: N.D.	
ratio to ether	: N.D.	

9.3 Other information:

Melting point/melting range	: 0	**°C**
Auto-ignition temperature	: N.D.	**°C**
Saturation concentration	: N.D.	**g/m³**
Specific conductivity	: N.D.	**pS/m**

10. Stability and reactivity

10.1 Conditions to avoid:
- Stable under normal conditions

10.2 Materials to avoid:
- Keep away from: heat sources

10.3 Hazardous decomposition products:
- On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide)

11. Toxicological information

11.1 Acute toxicity:

2-(2-butoxyethoxy)ethanol
LD50 oral rat : 5660 **mg/kg**
LD50 dermal rabbit : 2700 **mg/kg**

tris(2-hydroxyethyl)ammonium dodecylsulfate
LD50 oral rat : > 2000 **mg/kg**

11.2 Chronic toxicity:

2-(2-butoxyethoxy)ethanol

EC carc. cat. : not listed
EC muta. cat. : not listed
EC repr. cat. : not listed

Carcinogenicity (TLV) : not listed
Carcinogenicity (MAC) : not listed
Carcinogenicity (VME) : not listed
Carcinogenicity (GWBB) : not listed

Carcinogenicity (MAK) : not listed
Mutagenicity (MAK) : not listed
Teratogenicity (MAK) : C

IARC classification : not listed

11.3 Routes of exposure: ingestion, inhalation, eyes and skin

11.4 Acute effects/symptoms:

AFTER EYE CONTACT
- Redness of the eye tissue
- Irritation of the eye tissue

11.5 Chronic effects:

- Contains a substance of group C (MAK-Schwangerschaftsgruppe)(2-(2-butoxyethoxy)ethanol: no teratogenic risk at exposure level lower than MAK value)

12. Ecological information

12.1 Ecotoxicity:

Solberg Fire-Brake 3150A Class A Foam:
- LC50 (96 h) : 22 mg/l (SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 72 mg/l (DAPHNIA MAGNA)

2-(2-butoxyethoxy)ethanol:
- LC50 (96 h) : 1300 ppm (LEPOMIS MACROCHIRUS)
- EC50 (48 h) : >100 mg/l (DAPHNIA MAGNA)
- EC50 (192 h) : 53 mg/l (ALGAE)

tris(2-hydroxyethyl)ammonium dodecylsulfate:
- LC50 (48 h) : 7.2/9.3 mg/l (LEUCISCUS IDUS)
- EC50 (24 h) : 12.7/44.3 mg/l (DAPHNIA MAGNA)
- EC50 (h) : 10/100 mg/l (CHLOROPHYTA)

- **Effect on waste water purification** : Sludge digestion is inhibited at >1000 mg/l, 50%, 3h
  Harmless to activated sludge at sufficient dilution

12.2 Mobility:

- **Volatile organic compounds (VOC):** 0%
- Soluble in water

For other physicochemical properties see heading 9

12.3 Persistence and degradability:

- **biodegradation BOD_5** : 33 **% COD**
- **water** : - Readily biodegradable in water
  - test: 88%, 28d, OECD 301D
- **soil** : **T ½:** N.D. **days**

12.4 Bioaccumulative potential:
- **log P_{ow}** : <3 (components)
- **BCF** : N.D.
- Not bioaccumulative

12.5 Results of PBT assessment:
- Not applicable, based on available data.

12.6 Other adverse effects:

- **WGK** : 2 (Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- **Effect on the ozone layer** : Not dangerous for the ozone layer (1999/45/EC)
- **Greenhouse effect** : no data available

13. Disposal considerations

13.1 Provisions relating to waste:
- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 07 06 04* (other organic solvents, washing liquids and mother liquors)
- LWCA (the Netherlands): KGA category 03
- Hazardous waste (91/689/EEC)

13.2 Disposal methods:
- Dilute
- Do not discharge into drains or the environment
- May be discharged to wastewater treatment installation or reed bed
- Contains no organic halogen which may add to the AOX value

13.3 Packaging/Container:
- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10* (packaging containing residues of or contaminated by dangerous substances)

14. Transport information

14.1 Classification of the substance in compliance with UN Recommendations

UN number	: -
CLASS	:
SUB RISKS	:
PACKING GROUP	:

14.2 ADR (transport by road)

CLASS	: Not subject
PACKING GROUP	:
CLASSIFICATION CODE	:
DANGER LABEL TANKS	:
DANGER LABEL PACKAGES	:
PROPER SHIPPING NAME	:

14.3 RID (transport by rail)

CLASS	: Not subject
PACKING GROUP	:
CLASSIFICATION CODE	:
DANGER LABEL TANKS	:
DANGER LABEL PACKAGES	:
PROPER SHIPPING NAME	:

14.4 ADNR (transport by inland waterways)

CLASS	: Not subject
PACKING GROUP	:
CLASSIFICATION CODE	:
DANGER LABEL TANKS	:
DANGER LABEL PACKAGES	:

14.5 IMDG (maritime transport)

CLASS	: Not subject
SUB RISKS	:
PACKING GROUP	:
MFAG	:
EMS	:
MARINE POLLUTANT	:

14.6 ICAO (air transport)

CLASS	: Not subject
SUB RISKS	:
PACKING GROUP	:
PACKING INSTRUCTIONS PASSENGER AIRCRAFT	:
PACKING INSTRUCTIONS CARGO AIRCRAFT	:

14.7 Special precautions : not restricted for any mode of international transport

15. Regulatory information

15.1 EU legislation:

Classification according to directives 67/548/EEC, 1999/45/EC and 2006/8/EC

Irritant

R36	:	Irritating to eyes
S(02)	:	(Keep out of reach of children)
S(46)	:	(If swallowed, seek medical advice immediately and show this container or label)

15.2 National provisions:

The Netherlands:
Waterbezwaarlijkheid: 9

Germany:
WGK : 2 (Classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)

16. Other information

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
(*) = INTERNAL CLASSIFICATION (NFPA)

PBT-substances = persistent, bioaccumulative and toxic substances

Exposure limits:
TLV : Threshold Limit Value - ACGIH USA
WEL : Workplace Exposure Limits - United Kingdom
TRGS 900 : Technische Regel für Gefahrstoffe 900 (Arbeitsplatzgrenzwerte) - Germany
MAK : Maximale Arbeitsplatzkonzentrationen - Germany
MAC : Maximale aanvaarde concentratie - The Netherlands
VME : Valeurs limites de Moyenne d'Exposition - France
VLE : Valeurs limites d'Exposition à court terme - France
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium
GWK : Grenswaarde kortstondige blootstelling - Belgium
EC : Indicative occupational exposure limit values - directive 2000/39/EC

I : Inhalable fraction = **T:** Total dust = **E:** Einatembarer Aerosolanteil
R : Respirable fraction = **A:** Alveolengängiger Aerosolanteil/Alveolar dust
C : Ceiling limit

a:	aerosol		**r:**	rook/Rauch	(fume)
d:	damp	(vapour)	**st:**	stof/Staub	(dust)
du:	dust		**ve:**	vezel	(fibre)
fa:	Faser	(fibre)	**va:**	vapour	
fi:	fibre		**om:**	oil mist	
fu:	fume		**on:**	olienevel/Ölnebel	(oil mist)
p:	poussière	(dust)	**part:**	particles	

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands

Full text of any R phrases referred to under headings 2 and 3:
R36 : Irritating to eyes
R36/38 : Irritating to eyes and skin
R38 : Irritating to skin
R41 : Risk of serious damage to eyes
R51/53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment