SDS no. B271
Version 1
Revision date 04/Apr/2014
Supersedes date None

Safety Data Sheet
Coalbed Methane Foamer B271

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

1.1 Product identifier

Product name Coalbed Methane Foamer B271
Product code B271

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Foaming agent

Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424
SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards

Flammable Liquids	Category 3

2.2 Label elements

Signal word
WARNING

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H226 - Flammable liquid and vapor

Precautionary statements - EU (28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/protective clothing and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P501 - Dispose of contents/ container to an approved waste disposal plant

Supplementary precautionary statements
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P362 - Take off contaminated clothing and wash before reuse
P337 + P313 - If eye irritation persists: Get medical advice/attention
P370 + P378 - In case of fire: Use dry chemical, foam and carbon dioxide for extinction
P403 + P235 - Store in a well-ventilated place. Keep cool

Contains

ß-Alanine, N-coco alkyl derivs., sodium salts

2-butoxyethanol

Isopropanol

-

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
ß-Alanine, N-coco alkyl derivs., sodium salts	271-795-1	68608-68-4	30 - 60	Xi;R38	Skin Irrit. 2 (H319)	No data available
2-butoxyethanol	203-905-0	111-76-2	30 - 60	Xn; R20/21/22 Xi; R36/38	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	01-2119475108-36-xxxx
Isopropanol	200-661-7	67-63-0	1 - 5	F;R11 R67 Xi;R36	Flam. Liq. 2, (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319)	No data available

Comment
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 Description of first-aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Ingestion Get immediate medical attention. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Rinse mouth. If conscious, drink plenty of water.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact Get immediate medical attention. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Continue to rinse for at least 15 minutes.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use CO2, dry chemical, or foam.

Extinguishing media which shall not be used for safety reasons
Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Flammable liquid. Vapors may travel to source of ignition and flash back.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG
•3Y

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid contact with skin, eyes and inhalation of vapors. Remove all sources of ignition.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Use clean non-sparking tools to collect absorbed material. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide sufficient air exchange and/or exhaust in work rooms. Keep airborne concentrations below exposure limits. Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible with strong acids and bases Strong oxidizing agents

Storage class Flammable liquid storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL	Austria	Australia	Denmark
ß-Alanine, N-coco alkyl derivs., sodium salts	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	Possibility of significant uptake through the skin 20 ppm TWA; 98 mg/m³ TWA	Not determined	skin notation 20 ppm TWA; 96.9 mg/m³ TWA 50 ppm STEL; 242 mg/m³ STEL	20 ppm 98 mg/m³
Isopropanol	Not determined	Not determined	400 ppm TWA; 983 mg/m³ TWA 500 ppm STEL; 1230 mg/m³ STEL	200 ppm 490 mg/m³

Component	Finland	France	Germany	Hungary
ß-Alanine, N-coco alkyl derivs., sodium salts	Not determined	Not determined	Not determined	Not determined

2-butoxyethanol	Not determined	2 ppm 9.8 mg/m³	Not determined	Not determined
Isopropanol	Not determined	Not determined	Not determined	Not determined

Component	Ireland	Italy	Netherlands	Norway
ß-Alanine, N-coco alkyl derivs., sodium salts	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	Not determined	Not determined	100 mg/m³ GW	10 ppm 50 mg/m³
Isopropanol	Not determined	Not determined	Not determined	100 ppm 245 mg/m³

Component	Poland	Portugal	Romania	Russia
ß-Alanine, N-coco alkyl derivs., sodium salts	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	200 mg/m³ STEL Skin 98 mg/m³ TWA	20 ppm TWA	Not determined	Not determined
Isopropanol	1200 mg/m³ STEL Skin 900 mg/m³ TWA	400 ppm STEL 200 ppm TWA	Not determined	50 mg/m³ STEL vapor 10 mg/m³ TWA vapor

Component	Spain	Switzerland	Turkey	UK
ß-Alanine, N-coco alkyl derivs., sodium salts	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	50 ppm VLA-EC 245 mg/m³ VLA-EC Skin 20 ppm VLA-ED indicative limit value 98 mg/m³ VLA-ED indicative limit value	20 ppm STEL 98 mg/m³ STEL Skin 10 ppm MAK 49 mg/m³ MAK	50 ppm STEL 246 mg/m³ STEL Skin 20 ppm TWA 98 mg/m³ TWA	50 ppm STEL 246 mg/m³ STEL Skin 25 ppm TWA 123 mg/m³ TWA
Isopropanol	400 ppm VLA-EC 1000 mg/m³ VLA-EC 200 ppm VLA-ED it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound 500 mg/m³ VLA-ED it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound	400 ppm STEL 1000 mg/m³ STEL 200 ppm MAK 500 mg/m³ MAK	Not determined	500 ppm STEL 1250 mg/m³ STEL 400 ppm TWA 999 mg/m³ TWA

Component	ACGIH TLV	OSHA PEL
ß-Alanine, N-coco alkyl derivs., sodium salts	Not Determined	Not Determined
2-butoxyethanol	20 ppm	50 ppm TWA 240 mg/m³ TWA
Isopropanol	200 ppm	400 ppm TWA 980 mg/m³ TWA

Notes
No biological limit allocated

Derived No Effect Level (DNEL)

Short term exposure local effects
2-butoxyethanol
Inhalation 246 mg/m³
Short term exposure systemic effects
2-butoxyethanol

Dermal	89 mg/kg
Inhalation	663 mg/m³

Long term exposure systemic effects

2-butoxyethanol

Dermal	75 mg/kg
Inhalation	98 mg/m³

Isopropanol

Dermal	888 mg/kg bw/day
Inhalation	500 mg/m³

Predicted No Effect Concentration (PNEC) .

2-butoxyethanol

Fresh water	8.8 mg/l
Sea water	0.88 mg/l
Fresh water sediment	34.6 mg/kg
Sea sediment	3.46 mg/kg
Soil	3.13 mg/kg
Impact on sewage treatment	463 mg/l
Intermittent release	9.1 mg/l

Isopropanol

Fresh water	140.9 mg/L
Sea water	140.9 mg/L
Fresh water sediment	552 mg/kg
Sea sediment	552 mg/kg
Soil	28 mg/kg
Impact on sewage treatment	2251 mg/L
Intermittent release	140.9 mg/L

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Chemical splash goggles and/or face shield.
Hand protection	Wear chemical resistant gloves such as nitrile or neoprene, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown).
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odor	Ether-like
Color	Amber
Odor threshold	Not applicable

Property	**Values**	**Remarks**
pH	10 - 12	
pH @ dilution		
Melting/freezing point		
Boiling point/range	85 °C	
Flash point	33 °C	PMCC
Evaporation rate (BuAc =1)		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	0.9586 - 0.9886	@ 16°C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	27.1 mm2/s 40 °C	
Dynamic viscosity	35-45 cPs @24 °C	
Log Pow	Not determined	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	-9°C
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

10. Stability and reactivity

10.1 Reactivity

FLAMMABLE LIQUID AND VAPOR.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Heat, flames and sparks. Keep away from sources of ignition - No smoking.

10.5 Incompatible materials

Incompatible with strong acids and bases. Strong oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information Product is harmful by ingestion.

Inhalation Inhalation of vapors in high concentration may cause irritation of respiratory system.

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation.

Ingestion Harmful if swallowed.

Acute toxicity .

LD50 Oral	1,550 mg/kg
LD50 Dermal	3,409 mg/kg
LC50 Inhalation	34.09 mg/l

Component	LD50 Oral	LD50 Dermal	LD50 Inhalation
ß-Alanine, N-coco alkyl derivs., sodium salts	No data available	No data available	No data available
2-butoxyethanol	= 470 mg/kg (Rat)	= 220 mg/kg (Rabbit) = 2270 mg/kg (Rat)	= 2.21 mg/L (Rat) 4 h = 450 ppm (Rat) 4 h
Isopropanol	= 4396 mg/kg (Rat)	= 12870 mg/kg (Rabbit) = 12800 mg/kg (Rat)	= 72.6 mg/L (Rat) 4 h

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This substance has no evidence of mutagenic properties.

Carcinogenicity This substance has no evidence of carcinogenic properties.

Reproductive toxicity None known.

Routes of exposure Ingestion. Skin contact. Eye contact.

Routes of entry No route of entry noted.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

Ecotoxicity effects
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
ß-Alanine, N-coco alkyl derivs., sodium salts 68608-68-4 (30 - 60)	No information available	No information available	No information available
2-butoxyethanol 111-76-2 (30 - 60)	2950 mg/L LC50 (Lepomis macrochirus) = 96 h 1490 mg/L LC50 (Lepomis macrochirus) = 96 h	No information available	= 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea)
Isopropanol 67-63-0 (1 - 5)	9640 mg/L LC50 (Pimephales promelas) = 96 h 1400000 µg/L LC50 (Lepomis macrochirus) = 96 h 11130 mg/L LC50 (Pimephales promelas) = 96 h	1000 mg/L EC50 (Desmodesmus subspicatus) = 96 h 1000 mg/L EC50 (Desmodesmus subspicatus) = 72 h	13299 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with the European Directives on waste and hazardous waste.
Contaminated packaging	If recycling is not practicable, dispose of in compliance with local regulations. Empty containers may contain flammable or explosive vapors.
EWC Waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 16 03 05 - organic wastes containing dangerous substances

14. Transport information

14.1 UN Number

UN/ID No. (ADR/RID/ADN/ADG)	UN 1993
UN No. (IMDG)	UN 1993
UN No. (ICAO)	UN 1993

14.2 Proper shipping name
FLAMMABLE LIQUID, N.O.S. (contains Isopropanol)

14.3 Hazard class(es)

ADR/RID/ADN Hazard class	3
IMDG Hazard class	3
ICAO Hazard class/division	3

14.4 Packing group

ADR/RID/ADN Packing Group	III
IMDG Packing group	III
ICAO Packing group	III

14.5 Environmental hazard

Marine pollutant	No

14.6 Special precautions

Hazard identification no (ADR)	30
EmS (IMDG)	F-E, S-E
Emergency action code	•3Y
Tunnel restriction code	(D/E)
Hazchem code ADG	•3Y

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons
Australian Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP)

2-butoxyethanol
Schedule 6

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not Comply
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Does not Comply
New Zealand (NZIoC)	Does not Comply

U.S. Federal and State Regulations

Component	SARA 302 / TPQs	SARA 313	CERCLA RQ
ß-Alanine, N-coco alkyl derivs., sodium salts	N/A	N/A	N/A
2-butoxyethanol	N/A	N/A	N/A
Isopropanol	N/A	1.0 %	N/A

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Chemical Regulatory Compliance (GCRC)
Revision date	04/Apr/2014
Version	1

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H226 - Flammable liquid and vapor
H225 - Highly flammable liquid and vapor
H312 - Harmful in contact with skin
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H400 - Very toxic to aquatic life

Disclaimer
The information provided in this Material Safety Data Sheet 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 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 materials or in any process, unless specified in the text.