

SAFETY DATA SHEET

Product Trade Name: Zoneseal® 4000

Revision Date: 14-Sep-2017

Revision Number: 11

1. Identification

1.1. Product Identifier

Product Trade Name: Zoneseal® 4000
Synonyms: None
Chemical Family: Surfactant Blend
Internal ID Code: HM005881

1.2 Recommended use and restrictions on use

Application: Foam Stabilizer
Uses advised against: No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier

Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Telephone: 1-281-871-6107

Halliburton Group Canada
645 - 7th Ave SW Suite 1800
Calgary, AB, T2P 4G8, Canada
Telephone: 1-403-231-9300

Prepared By

Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number:

Emergency Telephone Number: 1-866-519-4752 or 1-760-476-3962 (accessible 24 hours a day / 7 days a week)
Global Incident Response Access Code: 334305
Contract Number: 14012

2. Hazards Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Skin Corrosion / Irritation	Category 2 - H315
Serious Eye Damage/Irritation	Category 1 - H318
Acute Aquatic Toxicity	Category 2 - H401
Chronic Aquatic Toxicity	Category 3 - H412

2.2. Label Elements

Hazard Pictograms



Signal Word: Danger

Hazard Statements
 H315 - Causes skin irritation
 H318 - Causes serious eye damage
 H401 - Toxic to aquatic life
 H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

Prevention
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P280 - Wear protective gloves
 P280 - Wear eye protection/face protection

Response
 P302 + P352 - IF ON SKIN: Wash with plenty of water.
 P332 + P313 - If skin irritation occurs: Get medical advice/attention
 P362 + P364 - Take off contaminated clothing and wash before reuse
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician

Storage
 None

Disposal
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	30 - 60%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	5 - 10%	Eye Corr. 1 (H318) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	5 - 10%	Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First Aid Measures

4.1. Description of first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.
Eyes In case of contact, immediately flush eyes with plenty of water for at least 30

	minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available
Skin	Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes.
Ingestion	If swallowed, do NOT induce vomiting. Give victim two glasses of water, Call a physician immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. Causes skin irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special exposure hazards in a fire

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations. Hazardous combustion products can include Carbon Oxides, Nitrogen Oxides and Formaldehyde.

5.3 Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Keep container closed when not in use. Store away from oxidizers. Store at temperatures below 140 F (60 C). Product has a shelf life of 24 months.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable	Not applicable

8.2 Appropriate engineering controls

Engineering Controls

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

Hand Protection

Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Color

Light yellow

Odor: Sweet

Odor

No information available

Threshold:

<u>Property</u> <u>Remarks/ - Method</u>	<u>Values</u>
pH:	6-8
Freezing Point / Range	No data available
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	> 98 °C / > 208.4 °F Tag Closed Cup (TCC)
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	> 1 mmHg
Vapor Density	No data available
Specific Gravity	1.091
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available
<u>9.2. Other information</u>	
VOC Content (%)	No data available

10. Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

Will Not Occur

10.4. Conditions to avoid

None anticipated

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Oxides of sulfur. Carbon monoxide and carbon dioxide. Oxides of nitrogen.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye and skin contact.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation

May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

**Eye Contact
Skin Contact**

Causes severe eye irritation which may damage tissue.

Causes skin irritation. May cause skin defatting with prolonged exposure.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

11.3 Toxicity data**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	4100 mg/kg (Rat) (Similar substance)	>5000 mg/kg (Rabbit (Similar substance)	No data available
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	>5000 mg/kg-bw (rat)	>2000 mg/kg-bw (rat)	No data available
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	1819 mg/kg (Rats) 700 - 1400 mg/kg (Rats)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Causes moderate skin irritation. (Rabbit) (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not irritating to skin in rabbits.
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		Non-irritating to the skin (49 % solution)

Substances	CAS Number	Serious eye damage/irritation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Causes severe eye irritation (Rabbit) (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Causes severe eye irritation (Rabbit)
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No information available

Substances	CAS Number	Skin Sensitization
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Did not cause sensitization on laboratory animals (guinea pig)
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		Did not cause sensitization on laboratory animals (mouse)

Substances	CAS Number	Respiratory Sensitization
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No information available
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	No information available
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No information available

Substances	CAS Number	Mutagenic Effects
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects.
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		In vitro tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not show carcinogenic effects in animal experiments (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Did not show carcinogenic effects in animal experiments
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No information available

Substances	CAS Number	Reproductive toxicity
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Did not show teratogenic effects in animal experiments. (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	No significant toxicity observed in animal studies at concentration requiring classification.
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Polyethylene glycol (C6-C10) alkyl ether, sulfate	68037-05-8	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

ammonium salt		
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	No significant toxicity observed in animal studies at concentration requiring classification.
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt		No information available

12. Ecological Information

12.1. Toxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	EC50 (72h) 73.52 mg/L (Skeletonema costatum) ErC50 (72h) 32 mg/L (Selenstrum capricornutum) (similar substance) NOErC (72h) 9 mg/L (Senastrum capricornutum) NOEC (72h) 32 mg/L (Skeletonema costatum)	LC50 (96h) 1 - 2.5 mg/L (Salmo trutta) (similar substance) LC50 (96h) 350 mg/L (Scophthalmus maximus) NOEC (30d) 0.88 mg/L (Pimephales promelas) (similar substance)	No information available	EC50 (48h) 1.17 mg/L (Daphnia magna) (similar substance) LC50 (96h) 232.5 mg/L (Acartia tonsa) NOEC (21d) 0.37 mg/L (Daphnia magna) (similar substance)
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	EC50 (96 h) 0.55 mg/L (Desmodesmus subspicatus) EC50 (72 h) 17.2 mg/L (Scenedesmus subspicatus) EC50 (72 h) 9.86 mg/L (Scenedesmus subspicatus) EC50 (72 h) 30 mg/L (Scenedesmus subspicatus)	LC50 (96 h) 2 mg/L (Brachydanio rerio) NOEC (28 d) 16 mg/L (Oncorhynchus mykiss)	No information available	EC50 (48 h) 6.5 mg/L (Daphnia magna) NOEC (21 d) 0.9 mg/L (Daphnia magna) NOEC (21 d) 0.932 mg/L (Daphnia magna) NOEC (21 d) 2.98 mg/L (Daphnia magna) NOEC (21 d) 0.03 mg/L (Daphnia magna) NOEC (21 d) 0.065 mg/L (Daphnia magna)
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	EC50 (72h) 0.41 mg/L (Skeletonema costatum) ErC50 (72h) > 9 mg/L (Senastrum capricornutum) NOErC (72h) 9 mg/L (Senastrum capricornutum)	LC50 (96h) 0.33 mg/L (Scophthalmus maximus) LC50 (96h) 1.5 mg/L LC50 (96h) 1.5 mg/L (Oryzias latipes)	No information available	LC50 (48h) 0.45 mg/L (Acartia tonsa) EC50 (48h) 1.24 mg/L (Daphnia magna) LC50 (10d) 287.13 mg/kg (Corophium volutator) NOEC (21d) 0.24 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Polyethylene glycol (C6-C10) alkyl ether, sulfate	68037-05-8	Readily biodegradable

ammonium salt		
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Readily biodegradable (>90% @ 28d)
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	(91-94% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Log Pow = 0.7
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Log Pow = 0.9
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	No information available
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	No information available
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal methods

Contaminated Packaging

Disposal should be made in accordance with federal, state, and local regulations. Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. Transport Information

US DOT

UN Number: Not restricted
 UN proper shipping name: Not restricted
 Transport Hazard Class(es): Not applicable
 Packing Group: Not applicable
 Environmental Hazards: Not applicable

Canadian TDG

UN Number: Not restricted
 UN proper shipping name: Not restricted
 Transport Hazard Class(es): Not applicable
 Packing Group: Not applicable
 Environmental Hazards: Not applicable

IMDG/IMO

UN Number: Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO

UN Number: Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Special Precautions for User: None

15. Regulatory Information

US Regulations

US TSCA Inventory: All components listed on inventory or are exempt.

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2	TSCA Section 5(E) Consent Orders
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable

EPA SARA (311,312) Hazard Class

Skin Corrosion or Irritation
 Serious eye damage or eye irritation

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable

EPA RCRA Hazardous Waste Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65

Substances	CAS Number	California Proposition 65
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Polyethylene glycol (C6-C10) alkyl ether, sulfate ammonium salt	68037-05-8	Not applicable	Not applicable	Not applicable
1-Propanaminium, 3-amino-n-(carboxy methyl)-n,n-dimethyl-n-coco alkyl derivatives, hydroxides and inner salts	61789-40-0	Not applicable	Not applicable	Not applicable
Alkanoic acid, sulfonated derivative, organic ester, sodium salt	Proprietary	Not applicable	Not applicable	Not applicable

NFPA Ratings: Health 2, Flammability 1, Reactivity 0
HMIS Ratings: Health 2, Flammability 1, Reactivity 0

Canadian Regulations

Canadian Domestic Substances List (DSL) All components listed on inventory or are exempt.

16. Other information**Preparation Information**

Prepared By Chemical Stewardship
 Telephone: 1-281-871-6107
 e-mail: fdunexchem@halliburton.com

Revision Date: 14-Sep-2017

Reason for Revision SDS sections updated:
2

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms used in the safety data sheet

bw – body weight
CAS – Chemical Abstracts Service
d - day
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
h - hour
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
mg/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
w/w - weight/weight

Key literature references and sources for data

www.ChemADVISOR.com/
OSHA
ECHA C&L

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End of Safety Data Sheet