HALLIBURTON

SAFETY DATA SHEET

Product Trade Name: **AS-9 ANTI-SLUDGING AGENT**

Revision Date: 29-May-2015 **Revision Number:** 16

1. Identification

1.1. Product Identifier

Product Trade Name: AS-9 ANTI-SLUDGING AGENT
Synonyms: None
Chemical Family: Blend
Internal ID Code HM000082

1.2 Recommended use and restrictions on use

Application: Anti-sludging Agent
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
Emergency Telephone: (281) 575-5000

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number (281) 575-5000

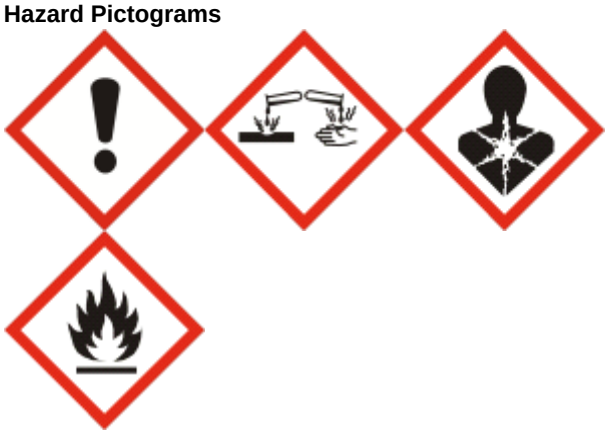
2. Hazard(s) Identification

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

Acute Oral Toxicity	Category 4 - H302
Skin Corrosion / Irritation	Category 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Carcinogenicity	Category 1 - H350
Reproductive Toxicity	Category 1B - H360
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Acute Aquatic Toxicity	Acute 2 - H401
Chronic Aquatic Toxicity	Chronic 3 - H412
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms



Signal Word Danger

Hazard Statements

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapor

Precautionary Statements

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P233 - Keep container tightly closed
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
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response	P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P330 - Rinse mouth P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P363 - Wash contaminated clothing before reuse P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P310 - Immediately call a POISON CENTER or doctor/physician P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P308 + P313 - IF exposed or concerned: Get medical advice/attention P370 + P378 - In case of fire: Use water spray for extinction P391 - Collect spillage
Storage	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P403 + P235 - Store in a well-ventilated place. Keep cool P405 - Store locked up
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains

Substances	**CAS Number**
Alkylbenzenesulfonic acid	Proprietary
1-Methoxy-2-propanol	107-98-2
Morpholine	110-91-8
Sulfated salt	Proprietary
Sulfuric acid	7664-93-9
2-Methoxy-1-propanol	1589-47-5

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Alkylbenzenesulfonic acid	Proprietary	30 - 60%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1C (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)
1-Methoxy-2-propanol	107-98-2	10 - 30%	STOT SE 3 (H336) Flam. Liq. 3 (H226)
Morpholine	110-91-8	10 - 30%	Acute Tox. 4 (H302) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Corr. 1 (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 3 (H402) Flam. Liq. 3 (H226)
Sulfated salt	Proprietary	1 - 5%	Eye Corr. 1 (H318) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)

Sulfuric acid	7664-93-9	0.1 - 1%	Skin Corr. 1A (H314) Eye Corr. 1 (H318) Carc. 1 (H350) STOT SE 3 (H335) Aquatic Acute 3 (H402)
2-Methoxy-1-propanol	1589-47-5	0.1 - 1%	Repr. 1B (H360) STOT SE 3 (H335) Flam. Liq. 3 (H226)

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 Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause respiratory irritation. Harmful if swallowed. Potential reproductive hazard. May cause birth defects. Carcinogen.

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

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

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

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.

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. Neutralize to pH of 6-8. 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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Store away from alkalis. Store away from oxidizers. Keep container closed when not in use. 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
Alkylbenzenesulfonic acid	Proprietary	Not applicable	Not applicable
1-Methoxy-2-propanol	107-98-2	Not applicable	TWA: 50 ppm STEL: 100 ppm
Morpholine	110-91-8	20 ppm Skin	TWA: 20 ppm Skin
Sulfated salt	Proprietary	Not applicable	Not applicable
Sulfuric acid	7664-93-9	1 mg/m³	TWA: 0.2 mg/m³
2-Methoxy-1-propanol	1589-47-5	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 Organic vapor/acid gas respirator with a dust/mist filter.

Hand Protection Impervious rubber gloves.

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: Dark brown

Odor: Amine

Odor Threshold: No information available

Property	Values

Remarks/ - Method	
pH:	0.78
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	58 °C / 138 °F PMCC
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	No data available
Vapor Density	No data available
Specific Gravity	1.07
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

9.2. Other information

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

Keep away from heat, sparks and flame.

10.5. Incompatible Materials

Strong alkalis. Strong oxidizers.

10.6. Hazardous Decomposition Products

Oxides of sulfur. Carbon monoxide and carbon dioxide.

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation. Ingestion.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

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

Eye Contact Causes severe eye burns.

Skin Contact Causes severe burns. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.

Ingestion Harmful if swallowed. Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity This product is a carcinogen. Prolonged or repeated exposure may cause liver, kidney and lung effects. May cause heritable genetic damage. Suspected of damaging fertility or the unborn child.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alkylbenzenesulfonic acid	Proprietary	530 mg/kg (Rat) 775 mg/kg (Rat) 1350 mg/kg (Rat) 1470 mg/kg (Rat) (similar substance)	530 mg/kg (Rat) 2000 mg/kg (Rabbit)	No data available
1-Methoxy-2-propanol	107-98-2	5200 mg/kg (Rat) 3739 mg/kg (Rat) 4016 mg/kg (Rat)	13000 mg/kg (Rabbit) > 2000 mg/kg (Rat)	54.6 mg/L (Rat) 4h 24 mg/L (Rat) 1h 27.8 mg/L (Rat) 6h
Morpholine	110-91-8	1050 mg/kg (Rat) 1600 mg/kg (Rat)	310 mg/kg (Rabbit) 500 mg/kg (Rabbit)	7.8 mg/L (Rat) 4h
Sulfated salt	Proprietary	988 mg/kg (Rat) 1976 mg/kg (Rat) > 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	No data available
Sulfuric acid	7664-93-9	2140 mg/kg (Rat)	No data available	347 ppm (Rat) 1h 510 mg/m³ (Rat) 2h 295 mg/m³ (Rat) 4h 375 mg/m³ (Rat) 4h 160 mg/m³ (Mouse) 4h 15 mg/m³ (Guinea pig) 4h 9 mg/m³ (Guinea pig) 4h
2-Methoxy-1-propanol	1589-47-5	5710 mg/kg (Rat)	5660 mg/kg (Rabbit)	>6.0 mg/L (Rat) 4h >36.9 mg/L (Rat) 4h 553 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Alkylbenzenesulfonic acid		Skin, rabbit: Causes burns
1-Methoxy-2-propanol	107-98-2	Not irritating to skin in rabbits. (Rabbit)
Morpholine	110-91-8	Skin, rabbit: Extremely corrosive and destructive to tissue
Sulfated salt		Not irritating to skin in rabbits.
Sulfuric acid	7664-93-9	Causes severe burns
2-Methoxy-1-propanol	1589-47-5	No data of sufficient quality are available.

Substances	CAS Number	Eye damage/irritation
Alkylbenzenesulfonic acid		Eye, rabbit: Causes eye burns.
1-Methoxy-2-propanol	107-98-2	Non-irritating to rabbit's eye
Morpholine	110-91-8	Eye, rabbit: Corrosive to eyes Causes severe eye irritation. Will damage tissue.
Sulfated salt		Causes severe eye irritation which may damage tissue. (Rabbit)
Sulfuric acid	7664-93-9	Causes severe eye irritation. Will damage tissue.
2-Methoxy-1-propanol	1589-47-5	No data of sufficient quality are available.

Substances	CAS Number	Skin Sensitization
Alkylbenzenesulfonic acid		Did not cause sensitization on laboratory animals (guinea pig)
1-Methoxy-2-propanol	107-98-2	Did not cause sensitization on laboratory animals (guinea pig)
Morpholine	110-91-8	Did not cause sensitization on laboratory animals (guinea pig)

Sulfated salt		Did not cause sensitization on laboratory animals
Sulfuric acid	7664-93-9	Not regarded as a sensitizer.
2-Methoxy-1-propanol	1589-47-5	No information available.

Substances	CAS Number	Respiratory Sensitization
Alkylbenzenesulfonic acid		No information available
1-Methoxy-2-propanol	107-98-2	No information available
Morpholine	110-91-8	No information available
Sulfated salt		No information available
Sulfuric acid	7664-93-9	No information available
2-Methoxy-1-propanol	1589-47-5	No information available.

Substances	CAS Number	Mutagenic Effects
Alkylbenzenesulfonic acid		In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
1-Methoxy-2-propanol	107-98-2	Not regarded as mutagenic.
Morpholine	110-91-8	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Sulfated salt		In vitro tests did not show mutagenic effects
Sulfuric acid	7664-93-9	Not regarded as mutagenic.
2-Methoxy-1-propanol	1589-47-5	Not mutagenic in AMES Test.

Substances	CAS Number	Carcinogenic Effects
Alkylbenzenesulfonic acid		No information available.
1-Methoxy-2-propanol	107-98-2	Did not show carcinogenic effects in animal experiments
Morpholine	110-91-8	Did not show carcinogenic effects in animal experiments
Sulfated salt		Not regarded as carcinogenic.
Sulfuric acid	7664-93-9	This substance is a potential carcinogen.
2-Methoxy-1-propanol	1589-47-5	No information available.

Substances	CAS Number	Reproductive toxicity
Alkylbenzenesulfonic acid		No data of sufficient quality are available.
1-Methoxy-2-propanol	107-98-2	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.
Morpholine	110-91-8	Did not show teratogenic effects in animal experiments. Animal testing did not show any effects on fertility. (similar substances)
Sulfated salt		Not regarded as a reproductive and developmental toxicant. (similar substances)
Sulfuric acid	7664-93-9	Did not show teratogenic effects in animal experiments.
2-Methoxy-1-propanol	1589-47-5	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.

Substances	CAS Number	STOT - single exposure
Alkylbenzenesulfonic acid		May cause respiratory irritation.
1-Methoxy-2-propanol	107-98-2	May cause disorder and damage to the Central Nervous System (CNS)
Morpholine	110-91-8	May cause respiratory irritation.
Sulfated salt		No information available
Sulfuric acid	7664-93-9	May cause respiratory irritation.
2-Methoxy-1-propanol	1589-47-5	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Alkylbenzenesulfonic acid		No data of sufficient quality are available.
1-Methoxy-2-propanol	107-98-2	No significant toxicity observed in animal studies at concentration requiring classification.
Morpholine	110-91-8	No significant toxicity observed in animal studies at concentration requiring classification.
Sulfated salt		No significant toxicity observed in animal studies at concentration requiring classification.
Sulfuric acid	7664-93-9	Not applicable due to corrosivity of the substance.
2-Methoxy-1-propanol	1589-47-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Alkylbenzenesulfonic acid		Not applicable
1-Methoxy-2-propanol	107-98-2	No information available

Morpholine	110-91-8	Not applicable
Sulfated salt		No information available
Sulfuric acid	7664-93-9	Not applicable
2-Methoxy-1-propanol	1589-47-5	No information available.

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Alkylbenzenesulfonic acid	Proprietary	EC50 (96h) 170 mg/L (Selenastrum capricornutum)	LC50 (96h) 3 mg/L (Oncorhynchus mykiss) NOEC (90d) 0.25 mg/L (Tilapia mossambica) (similar substance)	No information available	EC50 (48h) 2.9 mg/L (Daphnia magna) EC50 (24h) 5.9 mg/L (Daphnia magna)
1-Methoxy-2-propanol	107-98-2	EC50 (96h) > 1000 mg/L (Desmodesmus subspicatus)	LC50 (96h) 6812 mg/L (Leuciscius idus)	No information available	LC50 (48h) > 23300 mg/L (Daphnia magna)
Morpholine	110-91-8	EC50 (96h) 28 mg/L (Pseudokirchneriella subcapitata)	LC50 (96h) 83 mg/L (Pimephales promelas) LC50 (96h) 180 mg/L (Oncorhynchus mykiss) LC50 (96h) 240 mg/L (Oncorhynchus mykiss) LC50 (96h) 380 mg/L (Oncorhynchus mykiss)	EC20 (30min) >1000 mg/L (Activated sludge, industrial)	EC50 (48h) 45 mg/L (Daphnia magna) EC50 (48h) 207 mg/L (Daphnia magna)
Sulfated salt	Proprietary	No information available	LC50 (96h) 3.85 mg/L (Pimphales promelas)	No information available	LC50 (48h) 1.64 mg/L (Daphnia magna) NOEC (7d) 0.65 mg/L (Ceriodaphnia dubia)
Sulfuric acid	7664-93-9	ErC50 (72h) > 100 mg/L (Desmodesmus subspicatus)	LC50 (96h) > 500 mg/l (Danio rerio) LC50 (96h) 16-28 mg/L (Lepomis macrochirus) LC50 (96h) 42 mg/L (Gambusia affinis) NOEC (65d) 0.025 mg/L (fry growth) (Jordanella floridae) NOEC 0.31 mg/L (larval development) (Salvelinus fontinalis)	NOEC (21d) 6.61 pH (total bacteria) NOEC (37d) ~ 26000 mg/L (Activated sludge, respiration rate) (Similar substance)	EC50 (48h) 29 mg/L (Daphnia magna) EC50 (48h) > 100 mg/L (Daphnia magna) NOEL 0.15 mg/L (mortality) (Tanytarsus dissimilis) EC50 (24h) 29 mg/L (Daphnia magna) EC50 (48h) 42.5 mg/L (Pandalus montagui)
2-Methoxy-1-propanol	1589-47-5	EC50 (96h) 7153 mg/L (Green algae)	LC50 (96h) 16,500 mg/L (Pimephales promelas) LC50 (96h) 4998 mg/L (Pimephales promelas)	No information available	EC50 (48h) 19,000 mg/L (Daphnia magna) LC50 (96h) 24,965 mg/L (Mysid shrimp) LC50 (16d) 228 mg/L (Daphnid)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Alkylbenzenesulfonic acid	Proprietary	(94% @ 28d)
1-Methoxy-2-propanol	107-98-2	(96% @ 28d)
Morpholine	110-91-8	Readily biodegradable
Sulfated salt	Proprietary	(58% @ 28d)

Sulfuric acid	7664-93-9	The methods for determining biodegradability are not applicable to inorganic substances.
2-Methoxy-1-propanol	1589-47-5	Readily biodegradable (similar substances)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Alkylbenzenesulfonic acid	Proprietary	Log Pow = 4.15
1-Methoxy-2-propanol	107-98-2	-0.437 BCF = 3.16 (calculated)
Morpholine	110-91-8	-0.86
Sulfated salt	Proprietary	3.3 - 3.8
Sulfuric acid	7664-93-9	No information available
2-Methoxy-1-propanol	1589-47-5	Log Kow = -0.45 BCF = 10

12.4. Mobility in soil

Substances	CAS Number	Mobility
Alkylbenzenesulfonic acid	Proprietary	No information available
1-Methoxy-2-propanol	107-98-2	No information available
Morpholine	110-91-8	No information available
Sulfated salt	Proprietary	No information available
Sulfuric acid	7664-93-9	No information available
2-Methoxy-1-propanol	1589-47-5	No information available.

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number: UN2924

UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Propylene Glycol Monomethyl Ether, Dodecylbenzenesulfonic Acid)

Transport Hazard Class(es): 3 (8)

Packing Group: III

Environmental Hazards: Not applicable

NAERG: NAERG 132

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN2924

UN Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S. (Contains Propylene Glycol Monomethyl Ether, Dodecylbenzenesulfonic Acid)

Transport Hazard Class(es): 3 (8)

Packing Group: III

Environmental Hazards: Not applicable

IMDG/IMO

UN Number:	UN2924
UN Proper Shipping Name:	Flammable Liquid, Corrosive, N.O.S. (Contains Propylene Glycol Monomethyl Ether, Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es):	3 (8)
Packing Group:	III
Environmental Hazards:	Not applicable
EMS:	EmS F-E, S-C

IATA/ICAO

UN Number:	UN2924
UN Proper Shipping Name:	Flammable Liquid, Corrosive, N.O.S. (Contains Propylene Glycol Monomethyl Ether, Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es):	3 (8)
Packing Group:	III
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.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard Fire Hazard
EPA SARA (313) Chemicals	This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372: Glycol Ethers//107-98-2 Sulfuric Acid//7664-93-9
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Ignitability D001 Corrosivity D002
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 29-May-2015

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
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
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
h - hour
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data
www.ChemADVISOR.com/

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End of Safety Data Sheet