

SAFETY DATA SHEET

AS-10 ANTI-SLUDGING AGENT

Product Trade Name:

Revision Date: 09-Jun-2015

Revision Number: 21

1. Identification

1.1. Product Identifier

Product Trade Name: AS-10 ANTI-SLUDGING AGENT
Synonyms: None
Chemical Family: Organic acid
Internal ID Code: HM003238

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 C - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Acute Aquatic Toxicity	Category 2 - H401
Chronic Aquatic Toxicity	Category 2 - H411
Flammable liquids.	Category 4 - H227

2.2. Label Elements

Hazard Pictograms



Signal Word	Danger
Hazard Statements	H227 - Combustible liquid H302 - Harmful if swallowed H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H335 - May cause respiratory irritation H401 - Toxic to aquatic life H411 - Toxic to aquatic life with long lasting effects
Precautionary Statements	
Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking 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 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 P370 + P378 - In case of fire: Use water spray for extinction P391 - Collect spillage
Storage	P403 + P235 - Store in a well-ventilated place. Keep cool P404 - Store in a closed container P405 - Store locked up
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains**Substances****CAS Number**

Dodecylbenzene sulfonic acid

27176-87-0

Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%

147732-60-3

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
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Dodecylbenzene sulfonic acid	27176-87-0	30 - 60%	Acute Tox. 4 (H302) Skin Corr. 1C (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 2 (H401) Aquatic Chronic 3 (H412)
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	10 - 30%	Eye Irrit. 2 (H319) Aquatic Acute 2 (H401) Aquatic Chronic 1 (H410)

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	Remove contaminated clothing and launder before reuse. 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.

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

May deflagrate or explode in a fire due to heat and/or confinement. Evacuate area. Fight fire from a safe distance and from a protected location. 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 from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 36 months.

8. Exposure Controls/Personal Protection**8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Dodecylbenzene sulfonic acid	27176-87-0	Not applicable	Not applicable
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	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/acid gas respirator with a dust/mist filter.

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. (≥ 0.4 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:

Dark brown

Odor: Characteristic

Odor

No information available

Threshold:

Property

Values

Remarks/ - Method

pH:

< 1

Freezing Point/Range

-31 °C / -25 °F

Melting Point/Range

No data available

Boiling Point/Range

No data available

Flash Point

No data available

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

1.083

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 oxidizers. Strong alkalis.

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.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation

Causes severe respiratory burns. May cause Central Nervous System effects. Excessive inhalation causes headache, dizziness, nausea and incoordination.

Eye Contact

Causes severe eye burns.

Skin Contact

Causes severe burns. Harmful if absorbed through the skin.

Ingestion

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

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
Dodecylbenzene sulfonic acid	27176-87-0	500 mg/kg (Rat) 650 mg/kg (Rat) 1260 mg/kg (Rat)	> 2000 mg/kg (Rabbit) (similar substances)	No data available
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat) (similar substance)	No data available

Substances	CAS Number	Skin corrosion/irritation
Dodecylbenzene sulfonic acid	27176-87-0	Causes burns
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Non-irritating to the skin (Rabbit)

Substances	CAS Number	Eye damage/irritation
Dodecylbenzene sulfonic acid	27176-87-0	Causes eye burns.
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Causes moderate eye irritation. (Rabbit)

Substances	CAS Number	Skin Sensitization
Dodecylbenzene sulfonic acid	27176-87-0	Did not cause sensitization on laboratory animals (similar substances)

Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Did not cause sensitization on laboratory animals (guinea pig)
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Substances	CAS Number	Respiratory Sensitization
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	No information available

Substances	CAS Number	Mutagenic Effects
Dodecylbenzene sulfonic acid	27176-87-0	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances)
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	In vitro tests did not show mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Dodecylbenzene sulfonic acid	27176-87-0	No information available.
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	CAS Number	Reproductive toxicity
Dodecylbenzene sulfonic acid	27176-87-0	Did not show teratogenic effects in animal experiments.
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Dodecylbenzene sulfonic acid	27176-87-0	Irritates mucous membranes.
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Dodecylbenzene sulfonic acid	27176-87-0	No significant toxicity observed in animal studies at concentration requiring classification.
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Dodecylbenzene sulfonic acid	27176-87-0	Not applicable
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	Not applicable

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
Dodecylbenzene sulfonic acid	27176-87-0	EC50 (72h) 29 mg/L (Pseudokirchneriella subcapitata) EC50 (96h) 29 mg/L (Selenastrum capricornutum)	LC50 (96h) 10.8 mg/L (Oncorhynchus mykiss) LC50 (96h) 3.5 - 10 mg/L (Brachydanio rerio) LC50 (96h) 1 mg/L (Gadus morhua) LC50 (96h) 4.3 mg/L (Leuciscus idus) (similar substance) NOEC (90d) 0.25 mg/L (Tilapia mossambica) (similar substance) NOEC (72d) 0.23 mg/L (Salmo gairdneri) (similar substance)	LC50 0.9 mg/L (Microcystis)	EC50 (48h) 5.88 mg/L (Daphnia magna)
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	EC50(72h): > 220 mg/L (Selenastrum capricornutum)	LC50(96h): 6.8 mg/L (Cyprinus carpio) LC50(96h): 13 mg/L (Pimephales promelas) NOEC(32d): 0.0025 mg/L (Pimephales promelas)	No information available	EC50(48h): 11.8 mg/L (Daphnia magna) NOEC(21d): 0.7 - 1.0 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	(0% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	< -3.5

12.4. Mobility in soil

Substances	CAS Number	Mobility
Dodecylbenzene sulfonic acid	27176-87-0	No information available
Benzene, 1,1'-oxybis-, sec-hexyl derivatives, sulfonated sodium salts, 45%	147732-60-3	KOC = 4.4

12.5 Other adverse effects

No information available

13. Disposal Considerations**13.1. Waste treatment methods****Disposal Method****Contaminated Packaging**

Disposal should be made in accordance with federal, state, and local regulations. Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 8, 9
Packing Group: III
Environmental Hazards: Marine Pollutant
Reportable Quantity: RQ (Dodecylbenzene sulfonic acid - 1134 kg)
NAERG: NAERG 153

US DOT Bulk

DOT (Bulk) Not applicable

Canadian TDG

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 8, 9
Packing Group: III
Environmental Hazards: Marine Pollutant

IMDG/IMO

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 8, 9
Packing Group: III
Environmental Hazards: Marine Pollutant
Reportable Quantity: RQ (Dodecylbenzene sulfonic acid - 1134 kg)
EMS: EmS F-A, S-B

IATA/ICAO

UN Number: UN3265
UN Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Dodecylbenzenesulfonic Acid)
Transport Hazard Class(es): 8, 9
Packing Group: III
Environmental Hazards: Not applicable
Reportable Quantity: RQ (Dodecylbenzene sulfonic acid - 1134 kg)

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 Fire Hazard
EPA SARA (313) Chemicals	Not applicable.
EPA CERCLA/Superfund Reportable Spill Quantity	EPA Reportable Spill Quantity is 277 Gallons based on Dodecylbenzene sulfonic acid (CAS: 27176-87-0).
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: Corrosivity D002
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
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.
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16. Other information

Preparation Information

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

Revision Date: 09-Jun-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/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/
OSHA
ECHA C&L

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End of Safety Data Sheet