

**SAFETY DATA SHEET****Product Trade Name:** AS-11a

Revision Date: 17-Mar-2015

Revision Number: 7

**1. Identification****1.1. Product Identifier**

**Product Trade Name:** AS-11a  
**Synonyms:** None  
**Chemical Family:** Sulfate  
**Internal ID Code** HM005538

**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**

Skin Corrosion / Irritation	Category 1 - (H314)
Serious Eye Damage / Eye Irritation	Category 1 - (H318)
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - (H335)
Acute Aquatic Toxicity	Category 2 - (H401)

**2.2. Label Elements****Hazard Pictograms****Signal Word**

Danger

<b>Hazard Statements</b>	H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H335 - May cause respiratory irritation H401 - Toxic to aquatic life
<b>Precautionary Statements</b>	
<b>Prevention</b>	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
<b>Response</b>	P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing 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 P363 - Wash contaminated clothing before reuse
<b>Storage</b>	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up
<b>Disposal</b>	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains Substances	CAS Number
Ammonium salt	Proprietary

### 2.3 Hazards not otherwise classified

None known

### 3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Ammonium salt	Proprietary	30 - 60%	Acute Tox. 4 (H302) Skin Corr. 1 (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 2 (H401)

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.

<b>Eyes</b>	Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.
<b>Skin</b>	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.
<b>Ingestion</b>	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

#### **4.2 Most important symptoms/effects, acute and delayed**

Causes severe skin burns and eye damage. May cause respiratory irritation.

#### **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**

None anticipated

#### **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. 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.

### **7. Handling and storage**

#### **7.1. Precautions for Safe Handling**

##### **Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing mist. 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 oxidizers. Product has a shelf life of 60 months.

## 8. Exposure Controls/Personal Protection

### 8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Ammonium salt	Proprietary	Not applicable	Not applicable

### 8.2 Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area.

### 8.3 Individual protection measures, such as personal protective equipment

<b>Personal Protective Equipment</b>	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.
<b>Respiratory Protection</b>	Not normally needed. But if significant exposures are possible then the following respirator is recommended: Dust/mist respirator. (N95, P2/P3)
<b>Hand Protection</b>	Neoprene gloves.
<b>Skin Protection</b>	Neoprene coated apron or clothing.
<b>Eye Protection</b>	Chemical goggles; also wear a face shield if splashing hazard exists.
<b>Other Precautions</b>	Eyewash fountains and safety showers must be easily accessible.

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<b>Physical State:</b> Liquid	<b>Color:</b> Light yellow
<b>Odor:</b> Mild	<b>Odor</b> No information available
	<b>Threshold:</b>
<b>Property</b>	<b>Values</b>
Remarks/ - Method	
<b>pH:</b>	6 - 7 (10%)
<b>Freezing Point/Range</b>	No information available.
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	100 °C / 212 °F
<b>Flash Point</b>	> 94 °C / > 200 °F PMCC
<b>Flammability (solid, gas)</b>	No data available
upper flammability limit	No data available
lower flammability limit	No data available
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	1.01
<b>Water Solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

### 9.2. Other information

<b>VOC Content (%)</b>	No data available
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## 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**

Contact with oxidizing agents.

**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**

<b>Inhalation</b>	May cause respiratory irritation. Excessive inhalation causes headache, dizziness, nausea and incoordination.
<b>Eye Contact</b>	Causes serious eye damage.
<b>Skin Contact</b>	Causes severe skin irritation.
<b>Ingestion</b>	May cause abdominal pain, vomiting, nausea, and diarrhea. Irritation 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
Ammonium salt	Proprietary	1827 mg/kg (Rat)	500 mg/kg (Rabbits)	No data available

Substances	CAS Number	Skin corrosion/irritation
Ammonium salt		Causes severe skin irritation with tissue destruction. (Rabbit) (similar substances)

Substances	CAS Number	Eye damage/irritation
Ammonium salt		Causes severe eye irritation which may damage tissue. (Rabbit) (similar substances)

Substances	CAS Number	Skin Sensitization
Ammonium salt		Did not cause sensitization on laboratory animals (guinea pig) (similar substances)

Substances	CAS Number	Respiratory Sensitization
Ammonium salt		No information available

Substances	CAS Number	Mutagenic Effects
Ammonium salt		In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)
Substances	CAS Number	Carcinogenic Effects
Ammonium salt		Did not show carcinogenic effects in animal experiments (similar substances)
Substances	CAS Number	Reproductive toxicity
Ammonium salt		Did not show teratogenic effects in animal experiments. (similar substances)
Substances	CAS Number	STOT - single exposure
Ammonium salt		May cause respiratory irritation. (similar substances)
Substances	CAS Number	STOT - repeated exposure
Ammonium salt		No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)
Substances	CAS Number	Aspiration hazard
Ammonium salt		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
Ammonium salt	Proprietary	ErC50 (72h) 27 mg/L (Desmodesmus subspicatus) (similar substance)	LC50 (96h) 2.8 mg/L (Danio rerio) (similar substance)	No information available	EC50 (24h) 23 mg/L (Daphnia magna) (similar substance)

### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Ammonium salt	Proprietary	(96% @ 28d)

### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Ammonium salt	Proprietary	Log Kow = 3.42

### 12.4. Mobility in soil

Substances	CAS Number	Mobility
Ammonium salt	Proprietary	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:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**US DOT Bulk**

**DOT (Bulk)** 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.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard

<b>EPA SARA (313) Chemicals</b>	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
<b>EPA CERCLA/Superfund Reportable Spill Quantity</b>	Not applicable.
<b>EPA RCRA Hazardous Waste Classification</b>	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
<b>California Proposition 65</b>	The California Proposition 65 regulations apply to this product.
<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.

## Canadian Regulations

<b>Canadian DSL Inventory</b>	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:** 17-Mar-2015

#### **Reason for Revision**

Update to Format  
SECTION:  
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<sup>3</sup> - milligram/cubic meter  
mm - millimeter  
mmHg - millimeter mercury  
w/w - weight/weight  
d - day

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Disclaimer Statement**

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**End of Safety Data Sheet**