



SAFETY DATA SHEET

Product Trade Name: AMMONIUM SULFATE, SATURATED SOLUTION (11301)

Revision Date: 28-Dec-2015

Revision Number: 9

1. Identification

1.1. Product Identifier

Product Trade Name: AMMONIUM SULFATE, SATURATED SOLUTION (11301)
Synonyms: None
Chemical Family: Sulfate
Internal ID Code: HM003971

1.2 Recommended use and restrictions on use

Application: Reagent
Uses Advised Against: No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier

Fann Instrument Company
A Halliburton Energy Services, Inc. Company
P.O. Box 4350
Houston, TX 77210
Telephone: (281) 871-4482
Emergency Telephone: 1-866-519-4752 (US, Canada, Mexico) or 1-760-476-3962

Halliburton Energy Services
645 - 7th Ave SW Suite 2200
Calgary, AB
T2P 4G8
Canada

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

2. Hazard(s) Identification

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

As adopted by the competent authority, this product does not require an SDS or hazard warning label.

Not classified

2.2. Label Elements

Hazard Pictograms

Signal Word: Not Classified

Hazard Statements Not Hazardous

Precautionary Statements

Prevention None
Response None
Storage None
Disposal None

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - US |
|--|------------|---------------|-------------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

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, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.
Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

No significant hazards expected.

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

All standard fire fighting media

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

Decomposition in fire may produce harmful 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. 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 oxidizers. Store in a cool, dry location. Keep container closed when not in use.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

| Substances | CAS Number | OSHA PEL-TWA | ACGIH TLV-TWA |
|--|------------|----------------|----------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

8.2 Appropriate engineering controls

Engineering Controls 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 Ammonia respirator. In high concentrations, supplied air respirator or a self-contained breathing apparatus.

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: Clear colorless |
| Odor: Mild ammonia | Odor No information available |
| | Threshold: |

| <u>Property</u> | <u>Values</u> |
|---|--------------------------|
| <u>Remarks/ - Method</u> | |
| pH: | 5.5 |
| Freezing Point/Range | No data available |
| 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 | No data available |
| 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

None anticipated

10.5. Incompatible Materials

Strong oxidizers.

10.6. Hazardous Decomposition Products

Ammonia. Oxides of sulfur. Oxides of nitrogen. 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 | None known. |
| Eye Contact | Non-irritating to rabbit's eye |
| Skin Contact | Not irritating to skin in rabbits. |
| Ingestion | None known. |

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 |
|--|------------|-------------------|-------------------|-------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data 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 |
|--|------------|--------------------------|--------------------------|----------------------------|---------------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|--|------------|-------------------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

12.3. Bioaccumulative potential

| Substances | CAS Number | Log Pow |
|-------------------------------------|------------|--------------------------|
| Contains no hazardous substances in | NA | No information available |

| | | |
|--|--|--|
| concentrations above cut-off values according to the competent authority | | |
|--|--|--|

12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|--|------------|--------------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 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.**TSCA Significant New Use Rules - S5A2**

| Substances | CAS Number | TSCA Significant New Use Rules - S5A2 |
|--|------------|---------------------------------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable |

EPA SARA Title III Extremely Hazardous Substances

| Substances | CAS Number | EPA SARA Title III Extremely Hazardous Substances |
|--|------------|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable |

EPA SARA (311,312) Hazard Class

None

EPA SARA (313) Chemicals

| Substances | CAS Number | Toxic Release Inventory (TRI) - Group I | Toxic Release Inventory (TRI) - Group II |
|--|------------|---|--|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

EPA CERCLA/Superfund Reportable Spill Quantity

| Substances | CAS Number | CERCLA RQ |
|--|------------|----------------|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 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 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** Does not apply.**PA Right-to-Know Law** One or more components listed.**NFPA Ratings:** Health 2, Flammability 0, Reactivity 0**HMS Ratings:** Health 2, Flammability 0, Reactivity 0**Canadian Regulations****Canadian DSL Inventory** All components listed on inventory or are exempt.**16. Other information****Preparation Information****Prepared By**

Chemical Stewardship
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 e-mail: fdunexchem@halliburton.com

Revision Date:

28-Dec-2015

Reason for Revision Update to Format
SECTION:
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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/

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet