

Safety Data Sheet

Prepared for:

Anchor Drilling Fluids USA, Inc.
2431 East 61st Street, Suite 710
Tulsa, Oklahoma 74136
918.583.7701

October 2, 2013

Section 1: Identification	
<i>Identification of the chemical as well as the recommended uses and the essential contact information of the supplier.</i>	
Product Identifier:	Aluminum Sulfate
Common Name(s):	Aluminum Sulfate
Chemical Family:	NDA
Synonyms:	Sulfuric Acid, Aluminum Salt(3:2), Octadeca Hydrate, Cake Alum, Patent Alum
Manufacturer, Importer, and/or Responsible Party Information	
Name:	Anchor Drilling Fluids USA, Inc.
Address:	2431 East 61 st Street, Suite 710, Tulsa, Oklahoma 74136
Phone Number:	918.583.7701
Emergency Phone Number:	918.770.6023
Recommended Use of Chemical	
Chemical Services:	Used in mud drilling operations
Use Restrictions:	None



Section 2: Hazard(s) Identification

Identification of the hazards of the chemical presented and the appropriate warning information associated with those hazards.

Hazard Classification: C.4.1, C.4.2, C.4.3 & C.4.6 Acute Toxicity – Oral, Dermal, Inhalation & Sensitization-Respiratory

Signal Word: Danger

Hazard Statement(s): Harmful if swallowed, Harmful in contact with skin, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Pictogram(s):  Exclamation Mark  Health hazard

Precautionary Statement(s): **Wash thoroughly after handling:** Chemical manufacturer, importer, or distributor to specify parts of the body to be washed after handling. **Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing.** Chemical manufacturer, importer, or distributor to specify type of equipment. **Avoid breathing dust/fume/gas/mist/vapors/spray.** Chemical manufacturer, importer, or distributor to specify applicable conditions.

[In case of inadequate ventilation] wear respiratory protection.

Description of any hazards not otherwise classified: None

Mixture Identification (if toxicity is unknown)

Percentage of the mixture consisting of ingredient(s) with unknown toxicity: N/A

Note: this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3: Composition/Information on Ingredients

Identification of the ingredient(s) contained in the product, including impurities and stabilizing additives. This section includes information on substances, mixtures and all chemicals where a trade secret is claimed.

Substances

Chemical Names: Aluminum Sulfate

Common Names: Aluminum Sulfate

Synonyms: Sulfuric Acid, Aluminum Salt(3:2), Octadeca Hydrate, Cake Alum, Patent Alum

Chemical Abstract Service (CAS) Numbers: 10043-01-3 (Anhydrous), 7784-31-8 (Octadecahydrate)

Any other unique identifiers: NDA

Impurities and stabilizing additives (which are themselves classified and which contribute to the classification of the chemical): None

Mixtures

Product is a substance

Recommended Use of Chemical

Chemical Services: Used in mud drilling operations

Use Restrictions: None

Trade Secret

Is the specific chemical identity and/or exact concentration of composition withheld as a trade secret? No

Section 4: First-Aid Measures

Description of the initial care that should be given by untrained responders to an individual who has been exposed to the chemical.

Necessary first-aid instructions

Inhalation: Remove from area of exposure, if not breathing, give artificial respiration, see a physician

Acute Symptoms of Inhalation: May cause respiratory irritation, difficulty breathing and/or prevent breathing

Delayed Symptoms of Inhalation: None known

Skin Contact: Wash skin with soap and water. See a physician if symptoms develop or persist

Acute Symptoms of Skin Contact: May cause irritation

Delayed Symptoms of Skin Contact: None known

Eye Contact: After initial flushing, remove any contact lenses and continue flushing for 15 minutes. See a physician if symptoms develop or persist

Acute Symptoms of Eye Contact: May cause irritation and/or eye damage

Delayed Symptoms of Eye Contact: None known

Ingestion: If swallowed, do not induce vomiting. Immediately seek medical attention. Never give anything by mouth to an unconscious person

Acute Symptoms of Ingestion: May cause nausea and/or unconsciousness

Delayed Symptoms of Ingestion: None known

Immediate Medical Care / Special Treatment

Is immediate medical care or special treatment required? No

If so, what is needed: N/A

Section 5: Fire-Fighting Measures

Recommendations for fighting a fire caused by or including the chemical.

Suitable Extinguishing Equipment: Any available

Extinguishing equipment not appropriate: Addition of water may result in the formation of Sulfuric Acid

Specific hazards created from chemical burning: None

Special protective equipment needed: Wear full protective gear and NIOSH approved self contained breathing apparatus with full face piece

Section 6: Accidental Release Measures

Recommendations on the appropriate response to spills, leaks, or releases; including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment.

Personal Precautions: None

Emergency Procedure(s): Immediately contain the spill by covering and blocking off the area to prevent spreading.

Method(s) and material(s) used for containment: The spilled chemical will be contained by covering and blocking off the area. Then the chemical will be scooped up into bags or containers and disposed of in accordance with Section 13 of this SDS.

Cleanup procedure(s): Ventilate spill area, use appropriate protective gear, do not generate dust, cover spill with sodium bicarbonate or sodium ash and mix. Waste should be disposed of according to local, state and federal guidelines.

Section 7: Handling and Storage

Guidance on the safe handling practices and conditions for safe storage of the chemical.

Handling precautions: Keep in tightly closed container stored in cool, dry and well ventilated area. Spill areas become slippery. Clean promptly

Hygiene practices: A system of local and/or general exhaust is recommended (local exhaust ventilation is preferred in order to control emissions, wear impervious gloves, chemical goggles, and face shield where dusting or splashing is possible, wear a full face NIOSH approved respirator when exposure levels are elevated or unknown.

Safe storage recommendation: Keep in tightly closed container stored in cool, dry and well ventilated area.

Incompatible storage options: Moisture and incompatibles (i.e. – Corrosive to metals in presence of water)

Section 8: Exposure Controls/Personal Protection	
<i>Identification of the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure.</i>	
OSHA Permissible Exposure Limits (PELs):	Not a health hazard as defined by OSHA
American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs):	Not reported within the ACGIH TLVs printed 2013
Exposure limit (recommended by manufacturer, importer or employer):	Not reported within the ACGIH TLVs printed 2013
Appropriate Engineering Controls:	A system of local and/or general exhaust is recommended (local exhaust ventilation is preferred in order to control emissions, wear impervious gloves, chemical goggles, and face shield where dusting or splashing is possible, wear a full face NIOSH approved respirator when exposure levels are elevated or unknown.
Recommendations for personal protective measures:	None
Special requirements of PPE, protective clothing or respirators:	None

Section 9: Physical and Chemical Properties	
<i>Identification of physical and chemical properties associated with the substance or mixture.</i>	
Appearance (Physical State):	Crystals
Color:	Colorless
Odor:	Odorless
Odor Threshold:	Not regulated
Vapor Pressure:	NDA
Vapor Density:	NDA
pH:	NDA
Relative Density:	NDA
Melting Point:	NDA
Freezing Point:	NDA
Solubility(ies):	87G / 100CC Water at 0 degrees Celsius (32 degrees Fahrenheit)
Initial Boiling Point:	NDA
Boiling Range:	NDA
Flash Point:	NDA
Evaporation Rate:	NDA
Flammability:	Not Flammable
Upper/lower flammability or explosive limits:	None
Partition Coefficient:	NDA
Auto-Ignition Temperature:	NDA
Decomposition Temperature:	NDA
Viscosity:	NDA

Section 10: Stability and Reactivity	
<i>Description of the reactivity hazards of the chemical and the chemical stability information.</i>	
Reactivity	
Description of specific test data:	None
Chemical Stability	
Is the chemical stable or unstable:	Stable
Stabilizers needed to maintain chemical stability:	None
Safety issues that may arise should the chemical change in physical appearance:	N/A
Other	
Conditions in which hazardous reactions may occur:	Moisture
Possibility of hazardous reactions:	Formation of Sulfuric Acid and/or corrosive oxides
Will chemical react or polymerize:	NDA
Will chemical release pressure, heat, or any other hazardous conditions:	NO
Conditions to avoid:	Storing near moisture
Class(es) of incompatible material(s):	Metal
Known or anticipated hazardous decomposition products produced because of storage, use, or heating:	Corrosive Oxides

Section 11: Toxicological Information	
<i>Identification of toxicological and/or health effects.</i>	
Likely routes of exposure:	Eyes, Inhalation, Skin, Ingestion
Delayed, immediate or chronic effects of short-term exposure:	None
Delayed, immediate or chronic effects of long-term exposure:	None
Numerical measurement of toxicity:	Health: 2, Flammability: 0, Reactivity: 1
Description of symptoms (lowest to most severe):	Mild to severe irritation, loss of breath
Is chemical listed in the National Toxicology Program (NTP) Report on Carcinogens:	No
Has chemical been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs:	No
Has chemical been found to be a potential carcinogen by OSHA:	No

Section 12: Ecological Information (non-mandatory)

Information to evaluate the environmental impact of the chemical if it were released to the environment.

Toxicity test results performed on aquatic and/or terrestrial organisms: CDC – Toxicological Profile for Alluminum

Does the chemical have the potential to degrade the environment (biodegradation, oxidation, hydrolysis, etc.): No

Bioaccumulation test results: Does not bio-accumulate to a substantial degree

Potential of chemical moving from soil to the groundwater: No

Other adverse effects: None

Section 13: Disposal Considerations (non-mandatory)

Guidance on proper disposal practices, recycling or reclamation of the chemical or its container. Safe handling practices to minimize exposure. (Refer to section 8 for more information)

Appropriate disposal containers: Any container in compliance with local, state and federal guidelines

Appropriate disposal methods: Waste should be disposed according to local, state and federal guidelines

Physical and chemical properties that may affect disposal activities: Corrosive to metal in the presence of water

Special precautions for landfills or incineration activities: Follow local, state and federal regulations

Is it advisable to utilize sewage disposal for this chemical: No

Section 14: Transport Information (non-mandatory)

Guidance on classification information for shipping and transporting the chemical by road, air, rail, or sea.

This product is not a DOT/IMO Hazardous Material

Section 15: Regulatory Information (non-mandatory)

Identification of safety, health and environmental regulations specific for the chemical that is not indicated anywhere else on this SDS.

Chemical Weapons Convention (CWC): This product does not contain any chemicals listed under the CWC schedules of chemicals

Clean Air Act - Hazardous Air Pollutants (HAP): This product does not contain any chemicals listed within the Hazardous Air Pollutants.

Clean Air Act - Ozone Depleting Substances (ODS): "This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpart A, App. A+B).

Clean Water Act - Priority Pollutants (PP): This product does not contain any PP listed under the U.S. Clean Water Act, Section 307 (2)(1) PP List (40 CFR 401.15).

Occupational Safety and Health Act (OSHA): The OSHA Hazard Communication Standard (29 CFR 1910.1200) defines this product as C.4.1, C.4.2 & C.4.3 Acute Toxicity - Oral, Dermal & Inhalation: Hazard Category 4. For more information, see Section 2 of this SDS.

Resource Conservation and Recovery Act (RCRA): This product is not considered to be a P- or U-Listed hazardous waste under RCRA (40 CFR 261).

Superfund Amendments and Reauthorization Act (SARA) Title III: Section 302 - Extremely Hazardous Substances (EHS): This product does not contain any chemicals regulated under Section 302 (40 CFR 355) as extremely hazardous substances.

Superfund Amendments and Reauthorization Act (SARA) Title III: Section 304 - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA):

This product contains the following chemical(s) regulated under Section 304 (40 CFR 302) as hazardous substance(s) for emergency release notification ("CERCLA List):

Chemical Name: Aluminum Sulfate

CASRN: 10043-01-3

Statutory Code: 1

RCRA Waste No.: -

Final RQ (pounds): 5000 (2270)

Superfund Amendments and Reauthorization Act (SARA) Title III: Section 311/312 - Hazard Communication Standard (HCS): This product is not regulated under Section 3-1-312 (40 CFR 370).

Superfund Amendments and Reauthorization Act (SARA) Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any chemicals for routine annual toxic chemical release reporting under Section 313 (40 CFR 372).

TSCA Section 5(e) - Consent Order / Significant New Use Rule (SNUR): This product is not subject to a Section 5(3) Consent Order for Significant New Use Rule (SNUR).

TSCA Section 8(b) - Inventory Status: All chemical(s) comprising this product are either exempt or not listed on the TSCA inventory.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

Items in red require immediate attention.

Section 16: Other Information

Date of SDS Preparation: October 2, 2013

Revision Date: N/A

Changes from previous version: N/A

Other useful information:

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for any damage or expense.