Acidized Aluminum Sulfate Solution
SAFETY DATA SHEET

Section 1 – Product and Company Identification

Material Name: Acidized Aluminum Sulfate Solution

Manufacturer Information:
Affinity Chemical, LLC
PO Box 601298
Dallas, TX 75360
973-908-8053 (M-F, 8:00 AM -5:00 PM Eastern Time)

24 Hour Emergency Telephone:
Chemtrec 1-800-424-9300

Other Name(s): Acidified Alum, Acid/Alum Blend, Acid Alum

Product Usage:
Water treatment coagulant/flocculant, pH control, phosphate control, paper sizing aid

Section 2 – Hazard(s) Identification

Classification: Skin Corrosion 1, Eye Damage 1 , Corrosion 1
Signal Word: **Danger**
Hazard Statements: Causes severe skin burns and eye damage; May be corrosive to metals
Symbol(s): Corrosion
Precautionary Statements:

Prevention:
Do not breathe dusts or mists.
Wash hands, along with any other body parts that may have been exposed, thoroughly after handling.
Wear protective gear to prevent contact with skin (Rubber gloves, aprons, slicker suit)
Wear eye protection/face protection (clear goggles and face shield)
Keep only in original container.

Response:
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call a physician
Refer to first-aid measures (section 4) for any specific treatment
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: get medical attention
Absorb spillage to prevent material damage.

Storage:
Store locked up.
Store in compatible containers such as polypropylene , polyethylene, PVC, or 316 SS

Disposal:
Dispose of contents/container in accordance with applicable regulations. May constitute hazardous waste if pH is less than 2.
May also require consideration due to rate of corrosion of metal.

Other Hazards:
Ingestion or inhalation not recommended and could present hazards not otherwise classified.
IARC has determined that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans.
Sulfuric Acid mist is a non-genotoxic carcinogen; risk can be mitigated by maintaining exposure levels well below the irritation threshold, which is approximately 3-4 mg/m^3. OSHA 8-hour PEL for sulfuric acid is $1mg/m^3$. Minimize creation of mists and assure adequate ventilation.

Section 3 – Composition/Information on Ingredients

Chemical Family: Blend of inorganic salt and sulfuric acid
Common Name(s): Acid Alum

Hazardous Components	CAS#	Weight %
Aluminum Sulfate tetradecahydrate	16828-12-9	17.5-48.5%
Sulfuric Acid	7664-93-9	0.5-20%

Section 4 – First-Aid Measures

Skin/Eye Contact: For skin, immediately remove contaminated clothes under safety shower. Flush skin with running water for at least 15 minutes. Launder clothes before reuse. For eyes, flush for several minutes,remove contact lenses if present and easy to do;cautiously continue to flush person's eyes with running water for at least 15 minutes. Call Physician if irritation develops

Ingestion: Seek medical attention. Immediately dilute swallowed material by orally administrating large amounts of water or milk. DO NOT INDUCE VOMITING. NEVER administer liquids orally to an unconscious person.

Inhalation: Seek medical attention. Remove victim from the contaminated atmosphere. If breathing stopped, give artificial respiration. Weak breathing may be supplemented with a bag-mask or manually operated air supply that delivers at least 1 liter/second.

Section 5 – Fire-Fighting Measures

Suitable Extinguishing Media: Not combustible. Use extinguishing agents appropriate for surrounding fire

Special Fire Fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion byproducts by wearing a self contained breathing apparatus. Dike area to prevent runoff and contamination of water source. Stay upwind and keep out of low areas.

Unusual Fire/Explosion: Under fire conditions at temperatures greater than 650°C or 1202°F, decomposes to give off sulfur trioxide, an oxidizing agent which will support combustion. Sulfur trioxide will react to form sulfuric acid.

Section 6 – Accidental Release Measures

Spill or Leak: Wear PPE appropriate for handling the material. No smoking or eating in spill areas. Absorb small spills with sand or vermiculite. Place contaminated material in appropriate container for disposal. If spilled on ground, the affected area should be removed to a depth of 1 to 2 inches and placed in an appropriate container for disposal Large spills should be handled according to a predetermined plan. Do not flush material to public sewer systems or any waterways. Wear appropriate protective clothing and equipment during cleanup activities. Ensure adequate decontamination of tools and equipment following cleanup. Adequate ventilation is required when neutralizing spills / leaks.

Section 7– Handling and Storage

Smoking and/or eating is not recommended in storage areas. Stainless steel or fiberglass tanks are recommended. Keep product away from heat sources and direct sunlight. Do not reuse storage containers unless properly reconditioned.
Isolate appropriately from chemicals where low pH could create a hazardous byproduct; for example a combination with hypochlorite could lead to the evolution of chlorine gas.

Section 8– Exposure Controls/Personal Protection

Component	CAS#	OSHA PEL	ACGIH TLV
Aluminum Sulfate tetradecahydrate	16828-12-9	2.0 mg/m^3 (as Al)	2.0 mg/m^3 (as Al)
Sulfuric Acid	7664-93-9	1.0 mg/m^3	0.2 mg/m^3

If airborne exposures exceed 1.0 mg/m^3, a negative pressure air-purifying respirator is recommended. Cartridges must be NIOSH / MSHA approved against dusts and mists having TWA less than 0.05 mg/m^3
Eye wash and safety shower should be available near storage and usage points
Exposed skin and eyes should be protected. Minimal PPE would be closed goggles and face shield and rubber gloves with work clothing covering skin.
Arriving material may be hot; personnel performing unload operations or any operations where splashing or other means of exposure is likely should have additional PPE such as a rainsuit/slicker suit and appropriate footwear and gloves.

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Section 9– Physical and Chemical Properties

Appearance	Clear, water white to amber	Upper/lower flammability or explosive Limits	N/A
Odor	N/A	Vapor pressure	Similar to water
Odor threshold	N/A	Vapor density	Similar to water
pH (grade dependent)	0.4-2.8	Relative density (15.6^{o}C)	1.25-1.345
Melting point/freezing point	Approx. -15^{o}C	Solubility	high in water
Initial boiling point	Approx. 100^{o}C	Partition coef n-octanol/water	N/A
Flash point	N/A	Auto-ignition temp	N/A
Evaporation rate	N/A	Decomposition Temp	650^{o}C
Flammability	N/A	Viscosity	N/A

Section 10- Stability and Reactivity

Reactivity	Stable at normal temperatures and pressures
Chemical stability	Stable; water component can evaporate
Possibility of hazardous reactions	May produce hazardous decomposition products if mixed with pH sensitive materials (e.g. chlorine gas when mixed with sodium hypochlorite).
Conditions to avoid	Temperatures at or near to crystallization, -15°C or 4°F. At temperatures greater than 650°C or 1202°F, it decomposes to form aluminum oxide and sulfur trioxide
Incompatible materials	Corrosive to carbon steel
Hazardous decomposition products	This may include aluminum oxide and sulfur oxides.

Section 11- Toxicological Information

Acute Toxicity Estimate: The acute oral LD50 for Aluminum Sulfate (anhydrous)is 1930 mg/kg(rat). The acute oral LD50 for Sulfuric acid is 2140 mg/kg.

Chronic Toxicity Estimate: The acute oral LD50 for Aluminum Sulfate (anhydrous)is 1930 mg/kg(rat). The acute oral LD50 for Sulfuric acid is 2140 mg/kg.

Symptoms of Overexposure: May cause skin and eye irritation or damage. If inhaled, may cause headaches, nausea, and respiratory irritations.

Carcinogenicity: IARC has determined that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to humans. Sulfuric Acid mist is a non-genotoxic carcinogen; risk can be mitigated by maintaining exposure levels well below the irritation threshold,which is approximately 3-4 mg/m^3

Other Possible Health Hazards: The common recognized injury from Aluminum Sulfate is local tissue irritation. The irritating action is often from hydrolysis to form sulfuric acid or from the free sulfuric acid in the product and may occur from ingestion, skin or eye contact, or inhalation of dusts and mists. Remove person from contaminated area.
SKIN / EYES: May cause corneal burns or severe irritation in eyes. Fumes or mists may cause irritation or burns to skin.
INGESTION: Oral and gastrointestinal irritation. Local tissue damage. Nausea, vomiting, diarrhea, and gastrointestinal bleeding may follow. Can be fatal if swallowed in sufficient quantities.
INHALATION:Irritation of the respiratory system. Long term exposure may cause bronchial irritation, coughing, and bronchial pneumonia.

Routes of Entry: Ingestion, skin or eye contact, or inhalation of dusts and mists.

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Section 12- Ecological Information

(For CAS 10043-01-3 anhydrous aluminum sulfate)

Toxicity LC50 : 96h Mosquitofish: 235 mg/l (ECOTOX Database Ref 508, result 2063538)

Persistence and Degradability: Can be eliminated from water by precipitation or flocculation

Section 13- Disposal Considerations

Disposal: Contact site environmental personnel and/or state and federal agencies for disposal procedures that are in accordance with environmental regulations. Refer to section 6 for advice on accidental release measures

Section 14- Transport Information

U.S. DOT

PROPER SHIPPING NAME: Corrosive liquid,acidic,inorganic, N.O.S. (Contains Sulfuric Acid and Aluminum Sulfate)

Hazard Class	UN ID Number	Packing Group	RQ (lbs)
8	UN3264	PG II	1000

Section 15 – Regulatory Information

SARA Title III information:

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: Not listed

SECTION 313 TOXIC CHEMICAL: Not listed

RCRA HAZARD WASTE: Not listed

311/312 Health&Physical Hazards	Immediate	Delayed	Fire	Pressure	Reactivity
	Yes	No	No	No	No

NFPA Rating	Health	Fire	Reactivity
	2	0	1

MAXIMUM USE LEVEL (water treatment): 153 mg/l

Section 16– Other Information

Date of preparation: 6/1/2015 Version SDS 1.0