ATTACHMENT 1

February 18, 2025

BAY AREA CHEMICAL CONSORTIUM
BID NO. 01-2025
SUPPLY AND DELIVERY OF ALUMINUM SULFATE

Plant Manager:	Derek Bell
Phone Number	(916) 743-9775
E-mail Address:	derek.bell@tchem.com
Vice President of Marketing and Customer Service:	Jayson Stenquist
Phone Number:	(801) 972-4587 ext. 1444
E-mail Address:	jayson.stenquist@tchem.com
Market Analyst:	Tyler Andersen
Phone Number:	(801) 972-4587 ext. 1481
E-mail Address:	tyler.andersen@tchem.com

THIRD PARTY HAULERS

Medeiros (primary)
Name: Liquid Logistics LLC
Address:931 10th St Suite 949 Modesto, CA 95354
Contact information for the third party hauling company: George Medeiros 209-216-7041
Email address: dispatch@medeirostanklines.com

Torres Trucking
Name: JMT Logistics LLC
Address: PO Box 276, Hughson, CA 95326
Contact information for the third party hauling company: Juan Torres 209-595-6570/ 209-542-3460
Email address: jmt.logistics@yahoo.com

Watson BROS.
Name: WATSON BROS
Address: P.O BOX 862 FRENCH CAMP, CA 95231
Contact information for the third party hauling company: Stacey 209-986-1588
Email address: graycastleestate@aol.com

ATTACHMENT 2

February 18, 2025

BAY AREA CHEMICAL CONSORTIUM
STANDARD AGREEMENT, PAGE 1 OF 2
BID NO. 01-2025
SUPPLY AND DELIVERY OF ALUMINUM SULFATE

Description of Emergency Supply Plan: Provide a summary of vendor's plans to continue to supply product in the event of an unexpected disaster or urgent emergency event.

STRATEGIC SOURCING. An integral part of our chemical management philosophy is to develop multiple sources of supply for any single product or item. Our strategic approach is to first identify if TC can manufacture the product to the required specification, and then to develop relationships with basic producers and other supply chain partners so that we have a primary source and a secondary source for every product. In the case of Chlorine and sulfuric acid for alum, Thatcher purchases from both domestic and Canadian producers in the event that tariffs are implemented.

CONTINUITY OF SUPPLY. As indicated above, we continuously assess the marketplace, both in terms of product availability and transportation resources. One of our paramount strengths is in ensuring continuity of supply with proven logistics capabilities and redundant production locations. For the BACC, Thatcher Company of California, Inc. could utilize three different and distinct production facilities to support the volume in this bid. If we see a potential shortfall in a given product group, we change our supply position to ensure our customers' requirements are met (both in product availability and specification). If transportation resources become tight, we employ additional trucking and rail resources that meet our rigid selection criteria

INVENTORY MANAGEMENT. For tactical, day-to-day inventory management and replenishment, we analyze historical usage by product by location and utilize constant communication with the end-user in order to factor in seasonality, spikes in usage, process deviations and other critical facets that affect demand to determine a forecasted usage. Based on the future demand forecast, minimum and maximum inventory levels are set to ensure that customer needs are met. We have particular expertise in inventory management.

For select customers, TC employs an integrated customer demand system for replenishing our customer's on-site chemical inventories. We use a dedicated Key Account Coordinator that works hand-in-hand with our Account Manager and the designated customer on-site representative to closely monitor the levels of the customer's on-site chemical inventories. This continuous checking of customer inventories is integrated with our inventory in the upstream supply channel.

The net effect of this is that orders are anticipated. Thatcher Company is currently providing this chemical management program with other customers with much success. Chemical management may not be a core business interest for some of our customers; however, chemical management is absolutely a core competency for our business. The basic reason is economic. Stock-outs and emergency shipments are expensive – to your operation, and to your chemical provider. Our innovative approach removes this cost from the supply chain itself.

ORDER FULFILLMENT. The inventory replenishment process described above ensures product deliveries are made on a timely basis. This process is done at the operations levels, meaning the operating needs of the customer are met without daily purchasing coordination. TC ensures that each order is carefully executed.

TRANSPORTATION. Thatcher Company supplies customers throughout the United States via our Trucking Company. Our philosophy is to support 70% of our deliveries with our own assets and utilize carriers for 30% of our deliveries. Our fleet of transportation tractors and over specialized trailers accommodate the varied requirements of any chemical user. With national trucking contracts to supplement our own fleet and rail capabilities, our customers receive the most prompt service available.

Thatcher Transportation supplies just in time delivery with liquid bulk and dry bulk, package, LTL, van, and flatbed vehicles. For dry LTL products, we have a lift gate fleet for both van and flat bad deliveries. We provide pneumatic and liquid tanker service in truck/tanker load quantities, rocky mountain doubles and mini-bulk delivery systems. Our fleet maintenance program exceeds DOT requirements. All tractors are purchased with full warranties and our power units are replaced every four years.

Our dispatch office is staffed 7 days a week from 7:00 AM to Midnight and we are on-call 24/7/365. Each of our vehicles is equipped with a new Qual Com communication system for two-way communications as well as position location equipment for tracking each vehicle's exact position and automated hours of service recording. Each delivery is always on call and in view.

SUPPLY CHAIN MANAGEMENT. Thatcher Company performs many vital functions and services within the supply chain:

- We provide one primary contact to represent many suppliers to our Customer.
- We provide one primary contact to represent Customer's goals to many suppliers.
- We create standard practices between the Customer and chemical suppliers (simplified billing and P.O. management, for example).
- We have in-the-ground facilities and operations to support Customer operations.
- We leverage chemical purchases from a significantly larger pool of chemical requirements than just one customer.
- We bring operating knowledge from supplier companies to work on Customer issues.
- We manage not only "price-per-pound" analysis, but also "total cost of ownership" such as cost of ordering, cost of delivery, cost of disposal of waste products etc.
- We apply knowledge from one industry to another.
- Whenever practical, we manufacture products to specific customer needs.

In the final analysis, by addressing both the strategic and tactical aspects of inventory management, TC offers a chemical management program that guarantees both continuity and security of supply.

Thatcher Company of California, Inc.
Michael T. Mitchell
President

THATCHER COMPANY OF CALIFORNIA, INC.
8625 Unsworth Avenue, Sacramento, CA 95828

Phone (916) 389-2517
Fax (916) 389-2516

February 18, 2025

AFFIDAVIT OF COMPLIANCE

Aluminum Sulfate

This affidavit certifies and warrants the aluminum sulfate to be delivered to the Bay Area Chemical Consortium Agencies by Thatcher Company of California, Inc. fully complies with A.W.W.A. Specifications and ANSI/NSF Standard 60.

Michael T. Mitchell
President

Applicant: Thatcher Group, Inc.
Trade Name: Aluminum Sulfate
Product: Aluminum Sulfate
Manufacturer: Thatcher Co of California, Inc.

File No.: MH17003
Project No.: F178695
Normalization Factor: **0.1**

Method Name	Analyte Name	Result	Normalized Result	Units	Notes
Regulated Metals - RM60	Antimony	< 0.3	< 0.03	µg/L	
Regulated Metals - RM60	Arsenic	< 0.3	< 0.03	µg/L	
Regulated Metals - RM60	Barium	91	9.1	µg/L	
Regulated Metals - RM60	Beryllium	< 0.15	< 0.015	µg/L	
Regulated Metals - RM60	Cadmium	< 0.3	< 0.03	µg/L	
Regulated Metals - RM60	Chromium	< 1.0	< 0.1	µg/L	
Regulated Metals - RM60	Copper	< 10	< 1	µg/L	
Regulated Metals - RM60	Lead	< 0.3	< 0.03	µg/L	
Regulated Metals - RM60	Selenium	2.0	0.2	µg/L	
Regulated Metals - RM60	Thallium	< 0.15	< 0.015	µg/L	
Mercury - RM60	Mercury	< 0.1	< 0.01	µg/L	
BNAs	Acenaphthene	< 0.4	< 0.04	µg/L	
BNAs	Acenaphthylene	< 0.4	< 0.04	µg/L	
BNAs	Acetophenone	< 0.6	< 0.06	µg/L	
BNAs	Anthracene	< 0.2	< 0.02	µg/L	
BNAs	Benzo(a)anthracene	< 0.4	< 0.04	µg/L	
BNAs	Benzo(b)fluoranthene	< 0.2	< 0.02	µg/L	
BNAs	Benzo(k)fluoranthene	< 0.2	< 0.02	µg/L	
BNAs	Benzo(g,h,i)perylene	< 0.6	< 0.06	µg/L	
BNAs	Benzo(a)pyrene	< 0.2	< 0.02	µg/L	
BNAs	Benzothiazole	< 1.0	< 0.1	µg/L	
BNAs	Butylbenzylphthalate	< 1.0	< 0.1	µg/L	
BNAs	4-tert-Butylphenol	< 2.0	< 0.2	µg/L	
BNAs	4-Chloro-3-methylphenol	< 1.0	< 0.1	µg/L	
BNAs	2-Chlorophenol	< 1.0	< 0.1	µg/L	
BNAs	Chrysene	< 0.3	< 0.03	µg/L	
BNAs	Dibenzo(a,h)anthracene	< 0.2	< 0.02	µg/L	
BNAs	Di-n-butylphthalate	< 2.0	< 0.2	µg/L	
BNAs	3,3'-Dichlorobenzidine	< 0.5	< 0.05	µg/L	
BNAs	2,4-Dichlorophenol	< 1.0	< 0.1	µg/L	
BNAs	Di(2-ethylhexyl)adipate	< 0.5	< 0.05	µg/L	
BNAs	Di(2-ethylhexyl)phthalate	< 0.60	< 0.06	µg/L	
BNAs	Diethylphthalate	< 1.0	< 0.1	µg/L	
BNAs	2,4-Dimethylphenol	< 2.0	< 0.2	µg/L	
BNAs	Dimethylphthalate	< 1.0	< 0.1	µg/L	
BNAs	2,4-Dinitrophenol	< 1.0	< 0.1	µg/L	
BNAs	Di-n-octylphthalate	< 1.0	< 0.1	µg/L	
BNAs	Diphenylamine	< 0.3	< 0.03	µg/L	
BNAs	2,6-Di-tert-butyl-4-methoxyphenol	< 2.0	< 0.2	µg/L	
BNAs	Fluoranthene	< 0.2	< 0.02	µg/L	
BNAs	Fluorene	< 0.4	< 0.04	µg/L	
BNAs	Indeno(1,2,3-cd)pyrene	< 0.2	< 0.02	µg/L	
BNAs	Isophorone	< 0.5	< 0.05	µg/L	
BNAs	2-Methyl-4,6-dinitrophenol	< 1.0	< 0.1	µg/L	
BNAs	2-Methylnaphthalene	< 0.4	< 0.04	µg/L	
BNAs	2-Methylphenol	< 1.0	< 0.1	µg/L	
BNAs	4-Methylphenol	< 1.0	< 0.1	µg/L	
BNAs	Naphthalene	< 0.5	< 0.05	µg/L	
BNAs	2-Nitrophenol	< 1.0	< 0.1	µg/L	
BNAs	4-Nitrophenol	< 1.0	< 0.1	µg/L	
BNAs	N-Nitrosodi-N-butylamine (NDBA)	< 0.2	< 0.02	µg/L	

Applicant: Thatcher Group, Inc.
Trade Name: Aluminum Sulfate
Product: Aluminum Sulfate
Manufacturer: Thatcher Co of California, Inc.

File No.: MH17003
Project No.: F178695
Normalization Factor: **0.1**

Method Name	Analyte Name	Result	Normalized Result	Units	Notes
BNAs	N-Nitrosodi-N-propylamine (NDPA)	< 0.2	< 0.02	µg/L	
BNAs	Pentachlorophenol	< 0.5	< 0.05	µg/L	
BNAs	Phenanthrene	< 0.2	< 0.02	µg/L	
BNAs	Phenol	< 0.5	< 0.05	µg/L	
BNAs	2-Phenyl-2-propanol	< 0.6	< 0.06	µg/L	
BNAs	Phenyl sulfone	< 0.2	< 0.02	µg/L	
BNAs	Pyrene	< 0.6	< 0.06	µg/L	
BNAs	2,4,6-Trichlorophenol	< 1.0	< 0.1	µg/L	
BNAs	Bisphenol A propoxylate	< 5.0	< 0.5	µg/L	
BNAs	Caprolactam	< 5.0	< 0.5	µg/L	
BNAs	2,4-Dimethylquinoline	< 3.0	< 0.3	µg/L	
BNAs	2,6-Dimethylquinoline	< 3.0	< 0.3	µg/L	
BNAs	Quinoline	< 3.0	< 0.3	µg/L	
BNAs	Bisphenol A	< 5.0	< 0.5	µg/L	
BNAs	1,2-Dihydro-2,2,4-trimethylquinoline	< 2.0	< 0.2	µg/L	
BNAs	2,3,4-Trimethylquinoline	< 2.0	< 0.2	µg/L	
BNAs	2,4,6-Trimethylquinoline	< 2.0	< 0.2	µg/L	

Drinking Water Treatment Chemicals

COMPANY

Thatcher Group, Inc.
1905 FORTUNE RD
PO BOX 27407
SALT LAKE CITY, UT 84127-0407 United States

MH17003

NSF/ANSI 60

Plant at: Thatcher Company of California, Inc., Sacramento, CA

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Compliance Fe 3500	-	Coagulation and Flocculation Products	500
Compliance Fe 3600	-	Coagulation and Flocculation Products	500
Compliance Fe 3625	-	Coagulation and Flocculation Products	500
Compliance Fe 3650	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 10-13% Iron	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 12% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% IMG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG	-	Coagulation and Flocculation Products	500
Ferric Sulfate 13% WTG-M	-	Coagulation and Flocculation Products	500
Aluminum Sulfate [*Al]	[Al]	Coagulation and Flocculation Chemicals	150
Aries 293	-	Coagulation and Flocculation Chemicals	250
Ferric Chloride	-	Coagulation and Flocculation Chemicals	250
Poly Phosphate Ortho Phosphate Blends	-	Coagulation and Flocculation Chemicals	26
T-Floc B-135	[Al]	Coagulation and Flocculation Chemicals	250
T-Floc B-41	[Al], [PA]	Coagulation and Flocculation Chemicals	250
Alum, Acidified X [*Al]	-	Flocculation	150
Chlorine	-	Disinfection and Oxidation Chemicals	30
Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Pure Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Sani-Chlor	[HPH]	Disinfection and Oxidation Chemicals	30
Sierra Sani-Chlor AG	[HPH]	Disinfection and Oxidation Chemicals	30
Hydrofluosilicic Acid	-	Miscellaneous Treatment Chemicals	6
Hydrochloric Acid			
Hydrochloric Acid 20 Be	-	Corrosion& Scale Control, pH Adjustment	40
Muriatic Acid	-	Corrosion& Scale Control, pH Adjustment	40
Sodium Hydroxide 18%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	278
Sodium Hydroxide 20%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	250
Sodium Hydroxide 25%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	200
Sodium Hydroxide 30%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	167
Sodium Hydroxide 33%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	152
Sodium Hydroxide 50%	-	Corrosion and Scale Control, Softening, Sequestering, Precipitation and pH adjustment	100
Zinc Orthophosphate			
ZO-01 thru ZO-05	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	78
ZO-06 thru ZO-10	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	39
ZO-11 thru ZO-15	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	26
ZO-16 thru ZO-20	[Zn]	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	19

[Al] - The finished drinking water shall be monitored to verify that the level of aluminum does not exceed 2 mg/L.

[Cu] - The finished drinking water shall be monitored to verify that the level of copper does not exceed 1.3 mg/L.

[HPH] - Refer to AWWA B300, "Hypochlorites" for recommended storage and handling practices.

[OL] - These products are designed to be used off-line and flushed out prior to using the system for drinking water, following the manufacturer's use instructions. The pH or other water chemistry of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

[PA] - Complies with 40 CFR 141.111 requirements for percent monomer and dose when used at or below the MUL.

[Zn] - The finished drinking water shall be monitored to verify that the level of zinc does not exceed 2 mg/L

[*Al] - The finished drinking water shall be monitored to verify that the level of aluminum does not exceed 2 mg/L.

[*Cu] - This chemical contains copper and can increase the amount of copper in the finished drinking water. The finished drinking water shall be monitored to verify that levels of copper do not exceed 1.3 mg/L.

[*HPH] - Refer to AWWA B300, "Hypochlorites" for recommended storage and handling practices.

[*Mn] - The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

[*OL] - These products are designed to be used off-line and flushed out prior to using the system for drinking water, following the manufacturer's use instructions. The pH or other water chemistry of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

[*Zn] - The finished drinking water shall be monitored to verify that the level of zinc does not exceed 2 mg/L.

Last Updated on 2023-08-16

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

UL LLC

333 Pfingsten Road, Northbrook, IL 60062, United States

ACCREDITATION ID#0198

Fulfills the requirements of

ISO/IEC 17065:2012 Conformity assessment - Requirements for bodies certifying products, processes and services

LIST OF CERTIFICATION SCHEME(S)

US Safety Scheme

Equipment Sanitation Scheme

Water Systems Scheme

Accredited Elevator/Escalator Certification Organization (AECO): Elevator systems, subsystems, components, and functions for issuance of Certificates of Conformance and Marks according to ASME A17.7/CSA B44.

EPA WaterSense – WaterSense® Product Certification System

This certificate is valid only when accompanied by a current scope of accreditation document. The current scope of accreditation can be verified at www.anab.org.

Lori Gillespie, Vice President, MVP SBU

Expiry Date: 2025-12-01

Cert ID: XCACIMYC

THATCHER COMPANY OF CALIFORNIA, INC.
8625 Unsworth Avenue
Sacramento, CA 95828
916-389-2520

CHEM

CERTIFICATE OF ANALYSIS

This is to certify that the listed shipment of Aluminum Sulfate was assayed with the following results:

Analysis Date: 02/18/25
Lot Number: 2502141096

Property	Specification	Result
Total Al_2O_3 (%w/w)	8.0-8.2	8.1
Free Acid (as H_2SO_4,%w/w)	0.0	0.0
Free Alumina (%w/w)	None	None
Fe_2O_3 (%w/w)	<0.35	Pass
Specific Gravity (15C)	Report	1.31
Insolubles (%w/w)	< 0.2	0.0
Crystals (23C)	None	Pass
Color	Yellow to Water White	Pass
Clarity	Clear to slightly opaque	Pass

Certifications:

CLASSIFIED UL WATER QUALITY

ALUMINUM SULFATE
ANSI/NSF 60
<35Y2>
Maximum Use Level: 150 mg/L

This certificate is issued electronically and is valid without signature.
Thatcher Company of California, Inc.

KEY: UNLOCK

THATCHER COMPANY OF CALIFORNIA, INC.
8625 Unsworth Ave.
Sacramento, CA 95828
916-389-2520

PRODUCT SPECIFICATION

Alum (Aluminum Sulfate Solution)

CAS NUMBER: 10043-01-3
CHEMICAL FORMULA: $Al_2(SO_4)_3$
MOLECULAR WEIGHT: 342.14

PRODUCT DESCRIPTION:	Colorless solution free of suspended solids	
CERTIFICATIONS:	Certified by UL to meet ANSI 60 Standard for Drinking Water Additives (UL ref.: MH 17003) Product meets AWWA B-403 Specifications	
SPECIFICATIONS:	Clarity:	Clear with no visible matter present
	Color:	APHA 20 (max)
	Assay:	27.9% as $Al_2(SO_4)_3$ 48.4% as $Al_2(SO_4)_3$ $14H_2O$ 8.3% as Al_2O_3
	Free Acidity (as H_2SO_4)	0.0% (max)
	Free Alkalinity (as Al_2O_3):	0.20%
	Specific Gravity (20C):	1.329-1.337
	Iron (as Fe):	50 ppm (max)
	Arsenic (as As):	Non Detect (<0.5 ppm)
	Total Heavy Metals (as Pb):	100 ppm (max)
	Total Halides (as Cl):	500 ppm (max)

CERTIFICATIONS:

ALUMINUM SULFATE
ANSI/NSF 60
<35Y2>
MUL: 150 mg/L

WARRANTY

This information is, to the best of our knowledge, accurate, but may not be complete. Thatcher Company furnishes this information in good faith, but without warranty, representation or guarantee of its accuracy, completeness or reliability.

1/22/2018

SAFETY DATA SHEET

1. Identification

Product identifier	**Aluminum Sulfate Solution 7.8-8.0**
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Thatcher Company of California, Inc.
Address	8625 Unsworth Avenue Sacramento, CA 95828 United States
Telephone	(916) 389-2520
E-mail	inquiries@tchem.com
Emergency phone number	800 (424)-9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. May cause cancer. Toxic to aquatic life.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
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. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	73% of the mixture consists of component(s) of unknown acute oral toxicity. 73% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	70 - < 80
Aluminum Sulfate		10043-01-3	20 - < 30

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
Not applicable.

Special protective equipment and precautions for firefighters
Wear suitable protective equipment.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid release to the environment. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum Sulfate (CAS 10043-01-3)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Aluminum Sulfate (CAS 10043-01-3)	TWA	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron or protective suit is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Aqueous solution.

Color

Not available.

Odor

Not available.

Odor threshold

Not available.

pH

2 - 2.4 25C

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

Not available.

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	complete
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.32 - 1.34 g/cm3
Explosive properties	Not explosive.
Miscible (water)	complete
Oxidizing properties	Not oxidizing.
Specific gravity	1.32 - 1.34

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May cause respiratory irritation.

Components	Species	Test Results
Aluminum Sulfate (CAS 10043-01-3)		
Acute		
Oral		
LD50	Guinea pig	490 mg/kg
	Mouse	> 730 mg/kg

Components	Species	Test Results
	Rat	1930 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life.

Components		Species	Test Results
Aluminum Sulfate (CAS 10043-01-3)			
Aquatic			
Crustacea	EC50	Amphipod (Crangonyx pseudogracilis)	11.8 - 14 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3.4 - 5.6 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Sulfate RQ = 18519 LBS)

Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

DOT BULK

BULK

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Sulfate RQ = 18519 LBS)
Transport hazard class(es)	
Class	8
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Sulfate)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum Sulfate)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

DOT; DOT Bulk packaging type

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Aluminum Sulfate (CAS 10043-01-3) Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US - New Jersey RTK - Substances: Listed substance

Aluminum Sulfate (CAS 10043-01-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Aluminum Sulfate (CAS 10043-01-3)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Aluminum Sulfate (CAS 10043-01-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum Sulfate (CAS 10043-01-3)

US. Rhode Island RTK

Aluminum Sulfate (CAS 10043-01-3)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-27-2024

Revision date 09-26-2024

Version # 02

NFPA ratings Health: 3
Flammability: 0
Instability: 0

NFPA ratings

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Information Physical & Chemical Properties: Multiple Properties
Physical and chemical properties: Form

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