CHEMTRADE

DELEGATION OF AUTHORITY

I, Scott Rook, President and Chief Executive of Chemtrade Chemicals US LLC, a Delaware limited liability company ("Chemtrade"), do hereby delegate and appoint the following agents of Chemtrade to execute all municipal contracts and instruments, including bids, proposals and quotations, which in the ordinary course of business are processed by the Marketing Group of the company:

Parul Kachhia-Patel	Lisa Brownlee	Paul Peters	Elizabeth Ryno
Leilina Gossa	Christine LaSala	Delana Peralta	Michele Schroeher

Set forth below is a certified copy of the resolution of Chemtrade authorizing such action.

Dated as of the 8th day of April, 2021

Scott Rook
President and Chief Executive Officer

CERTIFICATE OF SECRETARY

I, Susan Pare, hereby certify that I am the Corporate Secretary of Chemtrade Chemicals US LLC ("Chemtrade") and that set forth below is a true and correct copy of the resolution of the Board of Managers of Chemtrade, adopted by unanimous written consent as of the **10th day of November, 2003** and that the same has not been modified or revoked and is on the date hereof in full force and effect:

> RESOLVED that any officer of the Company be, and he hereby is, authorized to delegate, with the right of further delegation, to any other officer, employee or agent of the Company, all or any part of the authority granted to them by the Board of Managers; and that any such delegations may be general or specific and subject to such limitations and restrictions as the delegating officer shall determine.

I FURTHER CERTIFY that Scott Rook is the duly elected President and Chief Executive Officer of Chemtrade and holds such offices on the date hereof, that Mr. Rook is, in his capacity as President and Chief Executive Officer is authorized to represent and bind Chemtrade in all matters including, but not limited to, contracts and that set forth below is the genuine signature of such officer:

Scott Rook
President and Chief Executive Officer

IN WITNESS WHEREOF, I have hereunto set my hand and have caused the seal of the Company to be affixed effective this 8th day of April, 2021.

Seal

Susan M Paré
Susan Pare
Corporate Secretary

90 East Halsey Road
Parsippany, NJ 07054
Tel: 800-441-2659

CHEMTRADE

Water Chemicals Group
90 East Halsey Road
Parsippany, NJ 07054
Tel: 800-441-2659
Fax: 973-515-4461
www.chemtradelogistics.com

Bay Area Chemical Consortium
Bid Number: 01-2022 Liquid Aluminum Sulfate
Opening: February 24, 2022 @ 4:00 p.m.

MANUFACTURING & SHIPPING INFORMATION:

Please note that the products included in this bid are manufactured in the United States of America. Chemtrade Chemicals will be manufacturing and shipping this material from our USA plant. Please see below for the exact address:

Bay Point Works
501 Nicholas Road
Pittsburg, CA 94565

Ph: (925) 458-7300
Fax: (925) 458-7352

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Elizabeth Ryno

Elizabeth Ryno
Marketing Specialist
Ph: (973) 515-1858
bids@ChemtradeLogistics.com

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90 East Halsey Road
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Bay Area Chemical Consortium
Bid Number: 01-2022 Liquid Aluminum Sulfate
Opening: February 24, 2022 @ 4:00 p.m.

SUBCONTRACTOR UTILIZATION

Please note that Chemtrade Chemical's Liquid Aluminum Sulfate manufacturing plant located in Pittsburg, CA. Product is typically shipped through our third-party carrier. Their information is as follows:

Chemical Transfer
1033 Stokes Avenue
Stockton, CA 95215
Phone: (209) 943-2639

Chemical Transfer has a long-standing relationship with Chemtrade Chemicals and meets all of our security and safety standards and due diligence in performing personnel background checks is in compliance. We further certify that this 3rd party carrier can haul and deliver the required chemicals to every participating BACC Agency.

Should you have any questions or concerns, please feel free to contact me.

Sincerely,

Elizabeth Ryno

Elizabeth Ryno
Marketing Specialist
Phone: (973) 515-1858
Email: *bids@ChemtradeLogistics.com*

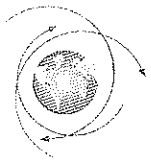
CHEMTRADE

Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 800-441-2659
Fax: 973-515-4461
www.ChemtradeLogistics.com

WARRANTY INFORMATION

Chemtrade Chemicals will accept return of material and replace material. Samples will be taken of material and analyzed. Any material that is off-spec as a result of a Chemtrade's production error will be replaced without cost to customer. If product damage is a result of transporation, we will then partner with our carrier to pursue the cause of the problem and develop a resolution in the best interest of the customer.



CHEMTRADE

Water Chemicals Group
90 East Halsey Road
Parsippany, NJ 07054
Tel: 973-515-0900
Fax: 973-515-4461

ORDER CONTACT, EMERGENCY CONTACT AND TECHNICAL SERVICE INFORMATION

Normal operating business hours are Monday – Friday 8:00 AM to 5:00 PM E.S.T.

To place orders, contact your Customer Service Representative:

Nadine Page
1-866-640-1592
E-mail: cssorders@chemtradelogistics.com
Fax: (514) 640-4858

After normal business hours, for emergencies *and orders please call 1-514-513-7401 and the on-call Customer Service Representative will be available to assist you. This number will also be provided if you call the regular Customer Service line.*

For Technical Service please call (315) 478-2323 or visit our website at: http://www.chemtradelogistics.com

Corporate/Sales Office
Chemtrade Chemicals US, LLC
90 East Halsey Road
Parsippany, NJ 07054

Janel Kirstein, Business Mgr.
Phone: (403) 617-3943
Email:
Jkirstein@chemtradelogistics.com

Robert Naranjo, Sales Acct. Mgr.
Mobile: (360) 440-0293
Email:
Rnaranjo@chemtradelogistics.com

For Bid/Contract Information:
Elizabeth Ryno
Ph: (800) 441-2659
Direct: (973) 515-1858
Fax: (973) 515-4461
BRyno@chemtradelogistics.com
bids@chemtradelogistics.com

Water Treatment Group

CHEMTRADE

90 East Halsey Road
Parsippany, NJ 07054
Tel: 1-800-441-2653
Fax: (973) 515-4461
www.chemtradelogistics.com

PRODUCT CERTIFICATION

Chemtrade Chemicals US, LLC certifies that all grades of the following products produced by our manufacturing locations will meet National Sanitation Foundation Standard 60 and ANSI/AWWA standard as indicated.

Aluminum Sulfate:	B403-16
Clar+Ion®:	B403-09

Safety Data Sheet, NSF Certification and related technical information is attached for review.

Elizabeth Ryno
Marketing Specialist

CHEMTRADE

ANALYTICAL SERVICES LABORATORY
REPORT OF ANALYSIS

To: Bay Area Chemical Consortium
cc: Beth Ryno

Lab. Log # 10611050

SAMPLES: Liquid Alum, Standard (hydrate) - Semi-Annual Audit
Lot# BY10607LAS 3/4

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al2O3 (total by wt)	8.1
Ba	<1	% Free Al2O3 (free by wt)	0.14
Be	<1	% Fe2O3 (total soluble by wt)	0.003
Ca	18	% Insolubles (by wt)	0.021
Cd	<1		
Co	<1	Turbidity (NTU)	2.4
Cr	<1	Appearance	Clear Water White
Cu	<1		
Fe	10	Color, Pt-Co	10
Hg	<0.5		
K	6		
Mg	10		
Mn	<1		
Mo	<1		
Na	279		
Ni	<1		
P	3		
Pb	<1.5		
Sb	<1.5		
Se	<1		
Si	7		
Sn	<1		
Sr	<1		
Ti	3		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

NOTES:
Product within specification for all parameters analyzed.

Analysts	Record	Report Date
Andrew Carr	TCESL06/170	2/18/2022
Kathleen Whalen	44379.483	BR 02/22/2022
	44412.457	

CHEMTRADE **ANALYTICAL SERVICES LABORATORY**
REPORT OF ANALYSIS

To: Bay Area Chemical Consortium
cc: Beth Ryno **Lab. Log #** 10611053

SAMPLES: Clar+Ion A7

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al2O3 (total by wt)	6.0
Ba	<1	% Free H2SO4 (free by wt)	7
Be	<1	% Fe2O3 (total soluble by wt)	0.002
Ca	13	% Insolubles (by wt)	<0.5
Cd	<1		
Co	<1		
Cr	<1		
Cu	<1		
Fe	7		
Hg	<0.5		
K	4		
Mg	8		
Mn	<1		
Mo	<1		
Na	207		
Ni	<1		
P	2		
Pb	<1.5		
Sb	<1.5		
Se	<1		
Si	5		
Sn	<1		
Sr	<1		
Ti	2		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

NOTES:
Product within specification for all parameters analyzed.

Analysts	Record	Report Date
Andrew Carr	BSE1061105	BR 2/22/2022
Kathleen Whalen		

CHEMTRADE

ANALYTICAL SERVICES LABORATORY
REPORT OF ANALYSIS

To: Bay Area Chemical Consortium
cc: Beth Ryno

Lab. Log # 10611051

SAMPLES: Liquid Alum, Acidized 2%

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al2O3 (total by wt)	7.5
Ba	<1	% Free H2SO4 (free by wt)	2
Be	<1	% Fe2O3 (total soluble by wt)	0.003
Ca	16	% Insolubles (by wt)	<0.05
Cd	<1		
Co	<1		
Cr	<1		
Cu	<1		
Fe	9		
Hg	<0.5		
K	5		
Mg	10		
Mn	<1		
Mo	<1		
Na	258		
Ni	<1		
P	3		
Pb	<1.5		
Sb	<1.5		
Se	<1		
Si	6		
Sn	<1		
Sr	<1		
Ti	3		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

NOTES:
Product within specification for all parameters analyzed.

Analysts	Record	Report Date
Andrew Carr	BSE1061105	BR 02/22/2022
Kathleen Whalen		

CHEMTRADE

ANALYTICAL SERVICES LABORATORY
REPORT OF ANALYSIS

To: Bay Area Chemical Consortium
cc: Beth ryno

Lab. Log # 10611052

SAMPLES: Liquid Alum, Acidized 5%

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al2O3 (total by wt)	6.8
Ba	<1	% Free H2SO4 (free by wt)	5
Be	<1	% Fe2O3 (total soluble by wt)	0.003
Ca	15	% Insolubles (by wt)	<0.05
Cd	<1		
Co	<1		
Cr	<1		
Cu	<1		
Fe	8		
Hg	<0.5		
K	5		
Mg	9		
Mn	<1		
Mo	<1		
Na	234		
Ni	<1		
P	2		
Pb	<1.5		
Sb	<1.5		
Se	<1		
Si	6		
Sn	<1		
Sr	<1		
Ti	3		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

NOTES:
Product within specification for all parameters analyzed.

Analysts	Record	Report Date
Andrew Carr	BSE 1061105	BR 02/22/2022
Kathleen Whalen		

CHEMTRADE **ANALYTICAL SERVICES LABORATORY**
REPORT OF ANALYSIS

To: Bay Area Chemical Consortium
cc: Beth Ryno **Lab. Log #** 10611053

SAMPLES: Liquid Alum, Acidized 7%

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al2O3 (total by wt)	6.0
Ba	<1	% Free H2SO4 (free by wt)	7
Be	<1	% Fe2O3 (total soluble by wt)	0.002
Ca	13	% Insolubles (by wt)	<0.5
Cd	<1		
Co	<1		
Cr	<1		
Cu	<1		
Fe	7		
Hg	<0.5		
K	4		
Mg	8		
Mn	<1		
Mo	<1		
Na	207		
Ni	<1		
P	2		
Pb	<1.5		
Sb	<1.5		
Se	<1		
Si	5		
Sn	<1		
Sr	<1		
Ti	2		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

NOTES:
Product within specification for all parameters analyzed.

Analysts	Record	Report Date
Andrew Carr	BSE1061105	BR 2/22/2022
Kathleen Whalen		

CHEMTRADE

http://www.chemtradelogistics.com

Liquid Alum

PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum is a clear, light green, slight yellow, brown, amber or orange-like tinted solution. It is a cationic inorganic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI/CAN Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate	
C.A.S.	10043-01-3 (Aluminum sulfate)	
	pH (neat)	1.4 - 2.6
	Specific Gravity @ 21°C (70°F)	1.30 - 1.35
	Freezing Point	-16°C (4°F)
	Density, lbs./gal., US	10.8 - 11.3
	Aluminum as Al, %	4.2 - 4.5
	Aluminum as Al_2O_3, %	8.0 - 8.4
	Aluminum as $Al_2(SO_4)_3 \cdot 14H_2O$ (Dry Alum), %	46 - 49

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Fixing rosin sizes on paper fibers. Paper machine drainage and retention aid. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport	Bulk car	275 US gal. one-way container	55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate)
Hazard Class: 8 ID Number: UN3264 Packing Group: III
The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear protective gloves, protective clothing, and eye protection. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24-hour **Emergency Number: USA and Canada (CHEMTREC) 800-424-9300**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

Liquid Alum

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 06/11/2019 Date of Issue: 05/01/2015 Version: 9.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Liquid Alum

Intended Use of the Product

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Met. Corr. 1	H290
Eye Dam. 1	H318
Aquatic Acute 3	H402

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms :

GHS05

Signal Word : Danger

Hazard Statements : H290 - May be corrosive to metals.
H318 - Causes serious eye damage.
H402 - Harmful to aquatic life.

Precautionary Statements : P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
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.
P304+P340 - IF INHALED: Remove person to fresh air and keep 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.

P321 - Specific treatment (see section 4 on this SDS).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, provincial, territorial and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS No) 7732-18-5	30 - 55	Not classified
Sulfuric acid, aluminum salt (3:2)**	(CAS No) 10043-01-3	45 - 70+	Met. Corr. 1, H290 Eye Dam. 1, H318 Aquatic Acute 3, H402

Full text of H-phrases: see section 16

**As $Al_2(SO_4)_3 \bullet 14H_2O$ (Dry Aluminum Sulfate).

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

+The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with the Hazardous Products Regulations (HPR) SOR/2015-17 and 29 CFR 1910.1200.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor.

Eye Contact: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: May cause skin irritation and eye damage.

Inhalation: May be corrosive to the respiratory tract.

Skin Contact: May cause irritation.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Contact with metallic substances may release flammable hydrogen gas.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Can liberate toxic and corrosive fumes of SO_2 and SO_3 under extreme conditions when boiled to dryness or heated above 600 ° C (1112 °F).

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Absorb spillage to prevent material damage. Cautiously neutralize spilled liquid.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: May be corrosive to metals. May release corrosive vapors.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Do not breathe vapors, mist, and spray.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials. Store in corrosive resistant container with a resistant inner liner. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Non acid-proof metals (such as aluminum, copper and iron), bases, unalloyed steel, galvanized surfaces.

Specific End Use(s)

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemical resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Clear
Odor	:	Odorless
Odor Threshold	:	Not available
pH	:	1.4 - 2.6
Evaporation Rate	:	Not available
Melting Point	:	Not applicable
Freezing Point	:	-15.56 °C (3.99 °F)
Boiling Point	:	101 °C (213.8 °F)
Flash Point	:	Not flammable
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20°C	:	Not available
Relative Density	:	Not available
Specific Gravity	:	1.30 – 1.35
Solubility	:	Water: Completely miscible in water
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Non acid-proof metals (such as aluminum, copper and iron), bases, unalloyed steel, galvanized surfaces.

Hazardous Decomposition Products: None expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: May causes skin irritation and eye damage.

pH: 1.4 - 2.6

Eye Damage/Irritation: Causes serious eye damage.

pH: 1.4 - 2.6

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: May be corrosive to the respiratory tract.

Symptoms/Effects After Skin Contact: May cause skin irritation.

Symptoms/Effects After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Effects After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life.

Sulfuric acid, aluminum salt (3:2) (10043-01-3)	
LC50 Fish 1	100 mg/l (Exposure time: 96h – Species: Carassius auratus [static])
EC50 Daphnia 1	12800 ug/l (Exposure time: 48h – Species: Crangonyx pseudogracilis)
LD50 Fish 2	33.9 mg/l (Exposure time: 96h – Species: Pimephales promelas [flow-through])

Persistence and Degradability

Liquid Alum	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Liquid Alum	
Bioaccumulative Potential	Not established.

Mobility in Soil

Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN3264	UN3264	UN3264	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (CONTAINS ALUMINUM SULFATE)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (CONTAINS ALUMINUM SULFATE)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (CONTAINS ALUMINUM SULFATE)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (CONTAINS ALUMINUM SULFATE)
Transport Hazard Class(es)	8	8	8	8
				
Packing Group	III	III	III	III
Environmental Hazards	**Marine Pollutant** : No	**Marine Pollutant** : No	**Marine Pollutant** : No	**Marine Pollutant**: N/A
Emergency Response	**ERG Number :** 154	**ERAP Index:** Not applicable	**EMS:** F-A, S-B	**ERG code (IATA):** 8L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	5000 lb	Not present	Not present	No

SARA 311/312

Liquid Alum
Immediate (acute) health hazard

US TSCA Flags

Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	No	No	No	No

State Right-To-Know Lists

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfuric acid, aluminium salt (3:2) (10043-01-3)	Yes	Yes	Yes	Yes	No	No	No	Yes

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfuric acid, aluminium salt (3:2) (10043-01-3)	Yes	Yes	No	No	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 06/11/2019

Revision Summary

Section	Change	Date Changed
1	Text update	06/11/2019
12	Text update	06/11/2019

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H318	Causes serious eye damage
H402	Harmful to aquatic life

NFPA 704

NFPA Health Hazard : 2
NFPA Fire Hazard : 0
NFPA Reactivity Hazard : 1

HMIS Rating

Health : 2
Flammability : 0
Physical : 1
PPE See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
Log Pow - Octanol/water Partition Coefficient
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health

Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA – Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS – Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association – Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA – Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC – European Candidate List of Substance of Very High Concern
TDG – Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA – United StatesToxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

Responsible Care®
Our commitment to sustainability

Gestion responsable™
Notre engagement envers le développement durable.

Liquid Alum, Acidized 2.0%

PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum, Acidized 2.0% is a colorless to light green or amber colored liquid. It is an advanced cationic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI/CAN Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate and sulfuric acid	
C.A.S.	10043-01-3 / 7664-93-9 (Aluminum sulfate / Sulfuric acid)	
	pH (neat)	Less than 1
	Specific Gravity @ 21°C (70°F)	1.29 - 1.31
	Freezing Point (approx.)	Less than -15°C (< 5°F)
	Density, lbs./gal., US	10.8 - 10.9
	Aluminum as Al, %	3.9 - 4.0
	Aluminum as Al_2O_3, %	7.4 - 7.6
	Free Acid, % as H_2SO_4	2

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport	Bulk car	275 US gal. one-way container	55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name:
Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate, Sulfuric Acid)
Hazard Class: 8 ID Number: UN3264 Packing Group: II
The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs. and for sulfuric acid is 1,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist, or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear protective gloves, protective clothing, and eye protection. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24-hour **Emergency Number: USA and Canada (CHEMTREC) 800-424-9300**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

Liquid Alum, Acidized 5.0%

PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum, Acidized 5.0% is a colorless to light green or amber colored liquid. It is an advanced cationic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI/CAN Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate and sulfuric acid	
C.A.S.	10043-01-3 / 7664-93-9 (Aluminum sulfate / Sulfuric acid)	
	pH (neat)	Less than 1
	Specific Gravity @ 21°C (70°F)	1.28 - 1.30
	Freezing Point (approx.)	Less than -18°C (< 0°F)
	Density, lbs./gal., US	10.7 - 10.8
	Aluminum as Al, %	3.5 - 3.7
	Aluminum as Al_2O_3, %	6.7 - 6.9
	Free Acid, % as H_2SO_4	5

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport	Bulk car	275 US gal. one-way container	55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name:
Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate, Sulfuric Acid)
Hazard Class: 8 ID Number: UN3264 Packing Group: II
The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs. and for sulfuric acid is 1,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist, or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear protective gloves, protective clothing, and eye protection. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24-hour **Emergency Number: USA and Canada (CHEMTREC) 800-424-9300**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

CHE-5060P-08

Revision Date: April 23, 2020

Liquid Alum, Acidized 7.0%

PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum, Acidized 7.0% is a colorless to light green or amber colored liquid. It is an advanced cationic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI/CAN Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate and sulfuric acid	
C.A.S.	10043-01-3 / 7664-93-9 (Aluminum sulfate / Sulfuric acid)	
	pH (neat)	Less than 1
	Specific Gravity @ 21°C (70°F)	1.27 - 1.29
	Freezing Point (approx.)	Less than -18°C (< 0°F)
	Density, lbs./gal., US	10.6 - 10.8
	Aluminum as Al, %	3.2 - 3.3
	Aluminum as Al_2O_3, %	6.1 - 6.3
	Free Acid, % as H_2SO_4	7

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport	Bulk car	275 US gal. one-way container	55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name:
Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate, Sulfuric Acid)
Hazard Class: 8 ID Number: UN3264 Packing Group: II
The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs. and for sulfuric acid is 1,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist, or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear protective gloves, protective clothing, and eye protection. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24-hour **Emergency Number: USA and Canada (CHEMTREC) 800-424-9300**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

CHE-5060P-09

Revision Date: April 23, 2020

Aluminum Sulfate, Acidized 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%, 4.0%, 5.0%, 7.0%, 10%, Aluminum Sulfate, pH1 Liquid

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 10/19/2018 Date of Issue: 05/05/2015 Version: 6.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Aluminum Sulfate, Acidized 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%, 4.0%, 5.0%, 7.0%, 10%, Aluminum Sulfate, pH1 Liquid

Intended Use of the Product

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Met. Corr. 1	H290
Skin Corr. 1A	H314
Eye Dam. 1	H318
Carc. 1A	H350
Aquatic Acute 3	H402

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms :

GHS05

GHS08

Signal Word : Danger

Hazard Statements : H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H350 - May cause cancer.
H402 - Harmful to aquatic life.

Precautionary Statements : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P234 - Keep only in original container.

P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
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.
P304+P340 - IF INHALED: Remove person to fresh air and keep 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.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P321 - Specific treatment (see section 4 on this SDS).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS-No.) 7732-18-5	30 - 85	Not classified
Sulfuric acid, aluminum salt (3:2)**	(CAS-No.) 10043-01-3	15 – 60+	Met. Corr. 1, H290 Eye Dam. 1, H318 Aquatic Acute 3, H402
Sulfuric acid***	(CAS-No.) 7664-93-9	0.1 – 10+	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 3, H402

Full text of H-phrases: see section 16

+The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with Regulations Amending the Hazardous Products Regulations (HPR) SOR/2018-68 and 29 CFR 1910.1200.

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

**As Al2(SO4)3●14H2O (Dry Aluminum Sulfate).

***Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Wash contaminated clothing before reuse. Get immediate medical advice/attention.

Eye Contact: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage. Causes serious eye damage. May cause cancer.

Inhalation: May be corrosive to the respiratory tract.

Skin Contact: Causes severe irritation which will progress to chemical burns.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Contact with metallic substances may release flammable hydrogen gas.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Corrosive vapors. Oxides of aluminum.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Do not handle until all safety precautions have been read and understood.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Cautiously neutralize spilled liquid. Absorb spillage to prevent material damage. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe vapors, mist, or spray. Do not get in eyes, on skin, or on clothing. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard.

Additional Hazards When Processed: May be corrosive to metals. May release corrosive vapors.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials. Store in corrosive resistant container with a resistant inner liner. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Metals. Strong oxidizers. Strong bases. Alkalis.

Specific End Use(s)

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Sulfuric acid (7664-93-9)		
Mexico	OEL TWA (mg/m³)	1 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³
USA IDLH	US IDLH (mg/m³)	15 mg/m³
Alberta	OEL STEL (mg/m³)	3 mg/m³
Alberta	OEL TWA (mg/m³)	1 mg/m³
British Columbia	OEL TWA (mg/m³)	0.2 mg/m³ (Thoracic, contained in strong inorganic acid mists)
Manitoba	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
New Brunswick	OEL STEL (mg/m³)	3 mg/m³
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nova Scotia	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nunavut	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Nunavut	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Northwest Territories	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction, strong acid mists only)
Northwest Territories	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction, strong acid mists only)
Ontario	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic)

Prince Edward Island	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Québec	VECD (mg/m³)	3 mg/m³
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Saskatchewan	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Yukon	OEL STEL (mg/m³)	1 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemically resistant materials and fabrics. Acid-resistant clothing.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Clear, light green or amber
Odor	:	Not available
Odor Threshold	:	Not available
pH	:	1.6
Evaporation Rate	:	Not available
Melting Point	:	< -14 °C (6.8 °F)
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not applicable
Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	Not available
Relative Vapor Density at 20°C	:	Not available
Relative Density	:	1.25 - 1.34
Specific Gravity	:	1.25 - 1.28
Solubility	:	100%.
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures, and incompatible materials.

Incompatible Materials: Strong oxidizers. Strong bases. Metals. May be corrosive to metals.

Hazardous Decomposition Products: Thermal decomposition generates: Corrosive vapors. Oxides of aluminum. Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 1.6

Eye Damage/Irritation: Causes serious eye damage.

pH: 1.6

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer.

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: May be corrosive to the respiratory tract.

Symptoms/Effects After Skin Contact: Causes severe irritation which will progress to chemical burns.

Symptoms/Effects After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Effects After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg
Sulfuric acid (7664-93-9)	
LD50 Oral Rat	2140 mg/kg
LC50 Inhalation Rat	510 mg/m³ (Exposure time: 2 h)
Strong inorganic acid mists containing sulfuric acid (Not applicable)	
National Toxicology Program (NTP) Status	Known Human Carcinogens.
Sulfuric acid (7664-93-9)	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life.

Sulfuric acid (7664-93-9)	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])

Persistence and Degradability

Aluminum Sulfate, Acidized 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%, 4.0%, 5.0%, 7.0%, 10%, Aluminum Sulfate, PH1 Liquid	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Aluminum Sulfate, Acidized 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%, 4.0%, 5.0%, 7.0%, 10%, Aluminum Sulfate, PH1 Liquid	
Bioaccumulative Potential	Not established.

Sulfuric acid (7664-93-9)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN3264	UN3264	UN3264	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND SULFURIC ACID)
Transport Hazard Class(es)	8	8	8	8
				
Packing Group	II	II	II	II
Environmental Hazards	**Marine Pollutant :** No	**Marine Pollutant** : No	**Marine Pollutant** : No	**Marine Pollutant:** N/A
Emergency Response	**ERG Number :** 154	**ERAP Index:** Not applicable	**EMS:** F-A, S-B	**ERG code (IATA):** 8L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	5000 lb	Not applicable	Not applicable	No
Sulfuric acid (7664-93-9)	1000 lb	1000 lb	1000 lb	Yes

SARA 311/312

Aluminum Sulfate, Acidized 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, 3.0%, 4.0%, 5.0%, 7.0%, 10%, Aluminum Sulfate, pH1 Liquid

Immediate (acute) health hazard. Delayed (chronic) health hazard

US TSCA Flags Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	No	No	No	No
Sulfuric acid (7664-93-9)	Yes	No	No	No

State Right-To-Know Lists

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Sulfuric acid (7664-93-9)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

Sulfuric acid (7664-93-9)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	Yes	Yes	Yes	Yes	No	No	No	Yes
Sulfuric acid (7664-93-9)	Yes	No	Yes	Yes	No	No	No	No

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	Yes	Yes	No	No	No	Yes	Yes	Yes
Sulfuric acid (7664-93-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 10/19/2018

Revision Summary

Section	Change	Date Changed
2	Classification Modified	10/19/2018
3	Language modified	10/19/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

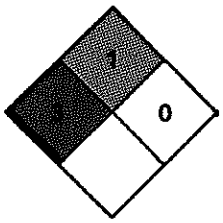
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H350	May cause cancer
H402	Harmful to aquatic life

NFPA 704

NFPA Health Hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA Fire Hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA Reactivity Hazard : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
* Chronic - Chronic (long-term) health effects may result from repeated overexposure

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

PPE See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA – Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS – Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association – Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
Log Pow - Octanol/water Partition Coefficient
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA – Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC – European Candidate List of Substance of Very High Concern
TDG – Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA – United StatesToxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

Responsible Care® Our commitment to sustainability

Gestion responsable™ Notre engagement envers le développement durable.

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Tuesday, February 22, 2022** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:
http://info.nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=chemtrade&TradeName=alum&PlantState=California+CA&

NSF/ANSI/CAN 60
Drinking Water Treatment Chemicals - Health Effects

Chemtrade Solutions LLC (formerly General Chemical LLC)

1421 Willis Avenue
Syracuse, NY 13204
United States
315-478-2323
Visit this company's website
(http://www.chemtradelogistics.com/main/)

Facility : Pittsburg, CA

Aluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Chloride Solution	Coagulation & Flocculation	200mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Aluminum Sulfate[AL] [CP]

Trade Designation	*Product Function*	*Max Use*

Alum	Coagulation & Flocculation	400 mg/L
Aluminum Sulfate	Coagulation & Flocculation	400 mg/L
Liquid Alum	Coagulation & Flocculation	400mg/L
Liquid Alum Acidized 0.5-10.0%	Coagulation & Flocculation	400 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

[CP] The finished drinking water shall be monitored to ensure that levels of copper do not exceed 1.3 mg/L.

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Polyaluminum Chloride	Coagulation & Flocculation	250 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Number of matching Manufacturers is 1

Number of matching Products is 6

Processing time was 0 seconds

Clar+Ion® A7

PRODUCT DATA SHEET

CHARACTERISTICS

Clar+Ion® A7 is a colorless to light green or amber colored liquid. It is an advanced cationic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI/CAN Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate and sulfuric acid	
C.A.S.	10043-01-3 / 7664-93-9 (Aluminum sulfate / Sulfuric acid)	
	pH (neat)	Less than 1
	Specific Gravity @ 21°C (70°F)	1.27 - 1.29
	Freezing Point (approx.)	Less than -18°C (< 0°F)
	Density, lbs./gal., US	10.6 - 10.8
	Aluminum as Al, %	3.2 - 3.3
	Aluminum as Al_2O_3, %	6.1 - 6.3
	Free Acid, % as H_2SO_4	7

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking.

SHIPPING CONTAINERS

Bulk transport	Bulk car	275 US gal. one-way container	55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name:
Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate, Sulfuric Acid)
Hazard Class: 8 ID Number: UN3264 Packing Group: II
The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs. and for sulfuric acid is 1,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist, or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear protective gloves, protective clothing, and eye protection. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24-hour **Emergency Number: USA and Canada (CHEMTREC) 800-424-9300**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

Clar+Ion® A7

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 05/11/2018 Date of Issue: 05/05/2015 Version: 5.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Clar+Ion® A7

Intended Use of the Product

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Met. Corr. 1	H290
Skin Corr. 1A	H314
Eye Dam. 1	H318
Carc. 1A	H350
Aquatic Acute 3	H402

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms :


GHS05


GHS08

Signal Word : Danger

Hazard Statements : H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H350 - May cause cancer.
H402 - Harmful to aquatic life.

Precautionary Statements : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.

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.
P304+P340 - IF INHALED: Remove person to fresh air and keep 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.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P321 - Specific treatment (see section 4 on this SDS).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS-No.) 7732-18-5	40-70	Not classified
Sulfuric acid, aluminum salt (3:2)**	(CAS-No.) 10043-01-3	30-60⁺	Met. Corr. 1, H290 Eye Dam. 1, H318 Aquatic Acute 3, H402
Sulfuric acid***	(CAS-No.) 7664-93-9	1-5⁺	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 3, H402

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).
**As Al2(SO4)3•14H2O (Dry Aluminum Sulfate).

***Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.
⁺The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with Regulations Amending the Hazardous Products Regulations (HPR) SOR/2018-68 and 29 CFR 1910.1200.
Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Wash contaminated clothing before reuse. Get immediate medical advice/attention.

Eye Contact: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage. Causes serious eye damage. May cause cancer.

Inhalation: Corrosive to the respiratory tract.

Skin Contact: Causes severe irritation which will progress to chemical burns.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Contact with metallic substances may release flammable hydrogen gas.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Corrosive vapors. Oxides of aluminum.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Do not handle until all safety precautions have been read and understood.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Cautiously neutralize spilled liquid. Absorb spillage to prevent material damage. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe vapors, mist, or spray. Do not get in eyes, on skin, or on clothing. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard.

Additional Hazards When Processed: May be corrosive to metals. May release corrosive vapors.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials. Store in corrosive resistant container with a resistant inner liner. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Metals. Strong oxidizers. Strong bases. Alkalis.

Specific End Use(s)

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Sulfuric acid (7664-93-9)		
Mexico	OEL TWA (mg/m³)	1 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³
USA IDLH	US IDLH (mg/m³)	15 mg/m³
Alberta	OEL STEL (mg/m³)	3 mg/m³
Alberta	OEL TWA (mg/m³)	1 mg/m³
British Columbia	OEL TWA (mg/m³)	0.2 mg/m³ (Thoracic, contained in strong inorganic acid mists)
Manitoba	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
New Brunswick	OEL STEL (mg/m³)	3 mg/m³
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nova Scotia	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nunavut	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Nunavut	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Northwest Territories	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction, strong acid mists only)
Northwest Territories	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction, strong acid mists only)
Ontario	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic)
Prince Edward Island	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Québec	VECD (mg/m³)	3 mg/m³
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Saskatchewan	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Yukon	OEL STEL (mg/m³)	1 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemically resistant materials and fabrics. Acid-resistant clothing.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Clear, light green or amber
Odor	:	Not available
Odor Threshold	:	Not available
pH	:	1.6
Evaporation Rate	:	Not available
Melting Point	:	< -14 °C (6.8 °F)
Freezing Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not applicable
Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	Not available
Relative Vapor Density at 20°C	:	Not available
Relative Density	:	1.25 - 1.34
Specific Gravity	:	1.25 - 1.28
Solubility	:	100%.
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures, and incompatible materials.

Incompatible Materials: Strong oxidizers. Strong bases. Metals. May be corrosive to metals.

Hazardous Decomposition Products: Thermal decomposition generates: Corrosive vapors. Oxides of aluminum. Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified
Acute Toxicity (Dermal): Not classified
Acute Toxicity (Inhalation): Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Causes severe skin burns and eye damage.
pH: 1.6
Eye Damage/Irritation: Causes serious eye damage.
pH: 1.6
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Carcinogenicity: May cause cancer.
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Effects After Inhalation: Corrosive to the respiratory tract.
Symptoms/Effects After Skin Contact: Causes severe irritation which will progress to chemical burns.
Symptoms/Effects After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.
Symptoms/Effects After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg
Sulfuric acid (7664-93-9)	
LD50 Oral Rat	2140 mg/kg
LC50 Inhalation Rat	510 mg/m³ (Exposure time: 2 h)
Strong inorganic acid mists containing sulfuric acid (Not applicable)	
National Toxicology Program (NTP) Status	Known Human Carcinogens.
Sulfuric acid (7664-93-9)	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life.

Sulfuric acid (7664-93-9)	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])

Persistence and Degradability

Clar+Ion® A7	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Clar+Ion® A7	
Bioaccumulative Potential	Not established.
Sulfuric acid (7664-93-9)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN3264	UN3264	UN3264	UN3264
Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND, SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND, SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND, SULFURIC ACID)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE AND, SULFURIC ACID)
Transport Hazard Class(es)	8	8	8	8
				
Packing Group	II	II	II	II
Environmental Hazards	**Marine Pollutant :** No	**Marine Pollutant** : No	**Marine Pollutant** : No	**Marine Pollutant**: N/A
Emergency Response	**ERG Number :** 154	**ERAP Index:** Not applicable	**EMS:** F-A, S-B	**ERG code (IATA):** 8L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	5000 lb	Not applicable	Not applicable	No
Sulfuric acid (7664-93-9)	1000 lb	1000 lb	1000 lb	Yes

SARA 311/312

Clar+Ion® A7
Immediate (acute) health hazard. Delayed (chronic) health hazard

US TSCA Flags Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	No	No	No	No
Sulfuric acid (7664-93-9)	Yes	No	No	No

State Right-To-Know Lists

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Sulfuric acid (7664-93-9)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Sulfuric acid, aluminum salt (3:2) (10043-01-3)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

Sulfuric acid (7664-93-9)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	**Australia AICS**	**Turkey CICR**	**Korea ECL**	**EU EINECS**	**EU ELINCS**	**EU SVHC**	**EU NLP**	**Mexico INSQ**
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	Yes	Yes	Yes	Yes	No	No	No	Yes
Sulfuric acid (7664-93-9)	Yes	No	Yes	Yes	No	No	No	No

Chemical Name (CAS No.)	**China IECSC**	**Japan ENCS**	**Japan ISHL**	**Japan PDSCL**	**Japan PRTR**	**Philippines PICCS**	**New Zealand NZIOC**	**US TSCA**
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	Yes	Yes	No	No	No	Yes	Yes	Yes
Sulfuric acid (7664-93-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 05/11/2018

Revision Summary

Section	**Change**	**Date Changed**
3	HPR Statement	06/02/2017
16	NFPA/HMIS update	06/02/2017

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
HHNOC 1	Health hazard not otherwise classified, category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage

H318	Causes serious eye damage
H350	May cause cancer
H402	Harmful to aquatic life

NFPA 704

NFPA Health Hazard : 3
NFPA Fire Hazard : 0
NFPA Reactivity Hazard : 0

HMIS Rating

Health : 3
Flammability : 0
Physical : 0
PPE See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA – Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS – Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association – Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
Log Pow - Octanol/water Partition Coefficient
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA – Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC – European Candidate List of Substance of Very High Concern
TDG – Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA – United StatesToxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.


Responsible Care®
Our commitment to sustainability
Gestion responsable™
Notre engagement envers le développement durable

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Tuesday, February 22, 2022** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:
http://info.nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=chemtrade&TradeName=clar%2Bion&PlantState=California+CA&

NSF/ANSI/CAN 60
Drinking Water Treatment Chemicals - Health Effects

Chemtrade Solutions LLC (formerly General Chemical LLC)
1421 Willis Avenue
Syracuse, NY 13204
United States
315-478-2323
Visit this company's website (http://www.chemtradelogistics.com/main/)

Facility : Pittsburg, CA

Aluminum Sulfate[AL] [CP]

Trade Designation	*Product Function*	*Max Use*
Clar+Ion® A1	Coagulation & Flocculation	400 mg/L
Clar+Ion® A10	Coagulation & Flocculation	400 mg/L
Clar+Ion® A15	Coagulation & Flocculation	263 mg/L
Clar+Ion® A20	Coagulation & Flocculation	208 mg/L
Clar+Ion® A3	Coagulation & Flocculation	400 mg/L
Clar+Ion® A5	Coagulation & Flocculation	400 mg/L
Clar+Ion® A7	Coagulation & Flocculation	400 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

[CP] The finished drinking water shall be monitored to ensure that levels of copper do not exceed 1.3 mg/L.

Polymer Blends[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
Clar+Ion® 4050	Coagulation & Flocculation	400 mg/L
Clar+Ion® 4055	Coagulation & Flocculation	400 mg/L
Clar+Ion® 4100	Coagulation & Flocculation	250 mg/L
Clar+Ion® 5100	Coagulation & Flocculation	100 mg/L
Clar+Ion® A401P	Coagulation & Flocculation	400mg/L
Clar+Ion® A402.5P	Coagulation & Flocculation	400mg/L
Clar+Ion® A402P	Coagulation & Flocculation	400mg/L
Clar+Ion® A405P	Coagulation & Flocculation	400 mg/L
Clar+Ion® A407.5P	Coagulation & Flocculation	333mg/L
Clar+Ion® A410P	Coagulation & Flocculation	250 mg/L
Clar+Ion® A415P	Coagulation & Flocculation	167 mg/L
Clar+Ion® A420P	Coagulation & Flocculation	125 mg/L
Clar+Ion® A505P	Coagulation & Flocculation	200 mg/L
Clar+Ion® A510P	Coagulation & Flocculation	100 mg/L
Clar+Ion® A515P	Coagulation & Flocculation	66 mg/L
Clar+Ion® A520P	Coagulation & Flocculation	50 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Number of matching Manufacturers is 1

Number of matching Products is 23

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