

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



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

February 14, 2024

AFFIDAVIT OF COMPLIANCE

Aluminum Sulfate

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

A handwritten signature in blue ink, appearing to read 'Michael T. Mitchell', is written over a horizontal line.

Michael T. Mitchell
President

ATTACHMENT 1

General Manager:	Phillip Belden
Phone Number	(702) 219-2372
E-mail Address:	philip.belden@tchem.com
Vice President of Marketing and Customer Service:	Jayson Stenquist
Phone Number:	(801) 972-4587 ext. 1444 MT
E-mail Address:	jason.stenquist@tchem.com



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

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

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



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

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

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

Drinking Water Treatment Chemicals

COMPANY

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

MH17003

NSF/ANSI 60

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Last Updated on 2023-08-16

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CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

UL LLC

333 Pfingsten Road, Northbrook, IL 60062, United States

ACCREDITATION ID#0198

Fulfills the requirements of

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

LIST OF CERTIFICATION SCHEME(S)

US Safety Scheme

Equipment Sanitation Scheme

Water Systems Scheme

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

EPA WaterSense – WaterSense® Product Certification System

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

Lori Gillespie, Vice President, MVP SBU

Expiry Date: 2025-12-01





THATCHER COMPANY OF CALIFORNIA

8625 Unsworth Ave, Sacramento, CA 95828
(702) 219-2372 PHONE

CERTIFICATE OF ANALYSIS

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

Lot Number: **2402111012**
Analysis Date: **02/16/24**

Property	Specification	Result
Total Al ₂ O ₃ (%w/w)	7.8-8.0	8.0
Free Acid (as H ₂ SO ₄ ,%w/w)	0.0	0.0
Free Alumina (%w/w)	None	Pass
Fe ₂ O ₃ (%w/w)	<0.35	Pass
Specific Gravity (15C)	Report	1.312
Insolubles (%w/w)	< 0.2	0.0
Crystals (23C)	None	Pass
Color	Yellow to Water White	Pass
Clarity	Clear to slightly opaque	Pass

Certifications:



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

Authorized Signature:
Ames Ettinger

Thatcher Company



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

PRODUCT SPECIFICATION

Alum (Aluminum Sulfate Solution)

CAS NUMBER: 10043-01-3
CHEMICAL FORMULA: $\text{Al}_2(\text{SO}_4)_3$
MOLECULAR WEIGHT: 342.14

PRODUCT DESCRIPTION: Colorless solution free of suspended solids

CERTIFICATIONS: Certified by UL to meet ANSI 60 Standard for Drinking Water Additives (UL ref.: MH 17003)
Product meets AWWA B-403 Specifications

SPECIFICATIONS:

Clarity:	Clear with no visible matter present
Color:	APHA 20 (max)
Assay:	27.9% as $\text{Al}_2(\text{SO}_4)_3$ 48.4% as $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$ 8.3% as Al_2O_3
Free Acidity (as H_2SO_4):	0.0% (max)
Free Alkalinity (as Al_2O_3):	0.20%
Specific Gravity (20C):	1.329-1.337
Iron (as Fe):	50 ppm (max)
Arsenic (as As):	Non Detect (<0.5 ppm)
Total Heavy Metals (as Pb):	100 ppm (max)
Total Halides (as Cl):	500 ppm (max)

CERTIFICATIONS:



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

WARRANTY

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

1/22/2018

SAFETY DATA SHEET

1. Identification

Product identifier Aluminum Sulfate - Liquid

Other means of identification None.

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Thatcher Company of California, Inc.

Address 8625 Unsworth Avenue
Sacramento, CA 95828
United States

Telephone (916) 389-2520

E-mail inquiries@tchem.com

Emergency phone number 800 (424)-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Danger

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

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 72.89% of the mixture consists of component(s) of unknown acute oral toxicity. 73.13% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum Sulfate		10043-01-3	20 - < 30
Sulfuric acid		7664-93-9	< 0.3
Other components below reportable levels			70 - < 80

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

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Wear suitable protective equipment.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe the mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Should not be released into the environment. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

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

Conditions for safe storage, including any incompatibilities Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum Sulfate (CAS 10043-01-3)	TWA	1 mg/m ³	Respirable fraction.
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Aluminum Sulfate (CAS 10043-01-3)	TWA	2 mg/m ³
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m ³

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

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

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

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

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Wash hands after handling and before eating. Keep away from food and drink.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Not available.

Odor Not available.

Odor threshold Not available.

pH < 2.4

Melting point/freezing point Not available.

Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.32 - 1.34 g/cm ³
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	72.89 % estimated
Specific gravity	1.32 - 1.34

10. Stability and reactivity

Reactivity	Reacts violently with strong alkaline substances. This product may react with reducing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Do not mix with other chemicals. Contact with incompatible materials.
Incompatible materials	Bases. Reducing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Harmful if swallowed. May cause respiratory irritation.

Components	Species	Test Results
Aluminum Sulfate (CAS 10043-01-3)		
Acute		
Oral		
LD50	Guinea pig	490 mg/kg
	Mouse	> 730 mg/kg
	Rat	1930 mg/kg
Sulfuric acid (CAS 7664-93-9)		
Acute		
Inhalation		
LC50	Guinea pig	0.018 mg/l, 8 Hours
	Rat	347 mg/l, 1 Hours
Oral		
LD50	Rat	2140 mg/kg

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

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	May cause cancer.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Sulfuric acid (CAS 7664-93-9)	1 Carcinogenic to humans.
US. National Toxicology Program (NTP) Report on Carcinogens	
Sulfuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Components	Species	Test Results
Aluminum Sulfate (CAS 10043-01-3)		
Aquatic		
Crustacea	EC50	Amphipod (Crangonyx pseudogracilis) 11.8 - 14 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) 3.4 - 5.6 mg/l, 96 hours
Sulfuric acid (CAS 7664-93-9)		
Aquatic		
Fish	LC50	Western mosquitofish (Gambusia affinis) 42 mg/l, 96 hours

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

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

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

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Sulfate RQ = 18608 LBS)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

DOT BULK

BULK

UN number	UN3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum Sulfate RQ = 18608 LBS)
Transport hazard class(es)	
Class	8
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

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

IMDG

UN number UN3264
UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum Sulfate)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT; DOT Bulk packaging type**IATA; IMDG****15. Regulatory information**

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

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

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

Sulfuric acid (CAS 7664-93-9) Listed.

SARA 304 Emergency release notification

Sulfuric acid (CAS 7664-93-9) 1000 LBS

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

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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Sulfuric acid	7664-93-9	1000	1000 lbs		
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SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

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

Sulfuric acid (CAS 7664-93-9)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sulfuric acid (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Sulfuric acid (CAS 7664-93-9) 20 %WV

DEA Exempt Chemical Mixtures Code Number

Sulfuric acid (CAS 7664-93-9) 6552

US state regulations**US - New Jersey RTK - Substances: Listed substance**

Aluminum Sulfate (CAS 10043-01-3)

Sulfuric acid (CAS 7664-93-9)

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

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Sulfuric acid (CAS 7664-93-9)

US. Massachusetts RTK - Substance List

Aluminum Sulfate (CAS 10043-01-3)

Sulfuric acid (CAS 7664-93-9)

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

Sulfuric acid (CAS 7664-93-9)

US. Pennsylvania RTK - Hazardous Substances

Aluminum Sulfate (CAS 10043-01-3)

Sulfuric acid (CAS 7664-93-9)

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

Aluminum Sulfate (CAS 10043-01-3)

Sulfuric acid (CAS 7664-93-9)

US. Rhode Island RTK

Aluminum Sulfate (CAS 10043-01-3)

Sulfuric acid (CAS 7664-93-9)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Sulfuric acid (CAS 7664-93-9) Listed: March 14, 2003

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

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

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

Issue date	10-22-2018
Revision date	11-14-2018
Version #	04
NFPA ratings	Health: 3 Flammability: 0 Instability: 0

NFPA ratings



Disclaimer

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

Revision Information

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