MUL = 150 mg/L
(dry basis)

SAFETY DATA SHEET

Revision date 2020-Dec-18 **Revision number** 2

1. IDENTIFICATION

Product identifier

Product name Aluminum Sulfate Solution

Other means of identification

Product code 3204M
Synonyms Sulfuric Acid, Aluminum Salt (3:2)

Recommended use of the chemical and restrictions on use

Recommended use [RU] No information available
Uses advised against None known

Details of the supplier of the safety data sheet

Supplier G2O Technologies LLC
9213 Arch Street Pike
Little Rock, AR 72206
+1-800-453-2586
Hours: Monday-Friday 9:00-5:00 CST (Central Standard Time)

Contact Point sdsinfo@g2otech.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: (800) 424-9300
Outside USA - +1 (703) 527-3887 collect calls accepted

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

EMERGENCY OVERVIEW

Physical state	Color	Appearance	Odor
liquid	colorless to yellow-brown or yellow-green	clear	odorless

GHS Label elements, including precautionary statements

DANGER

Hazard statements
Causes severe skin burns and eye damage
May be corrosive to metals

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Keep only in original container.

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Absorb spillage to prevent material damage.

Precautionary Statements - Storage
Store locked up. Store in corrosive resistant container with a resistant inner liner.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other information
• Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	weight-%	TRADE SECRET
Aluminum sulfate	10043-01-3	< 30%	*
Water	7732-18-5	> 70%	*

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

*The exact percentage (concentration) of composition has been withheld as a trade secret While some substances are claimed as trade secret in accordance with the provision of OSHA 29 CFR 1910.1200(i), all known hazards are clearly communicated within this document.

4. FIRST AID MEASURES

First Aid Measures

Eye contact
Remove contact lenses, if worn. Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek medical advice immediately.

Skin contact
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion
Do not induce vomiting. Give large amounts of water followed by milk if available. If vomiting should occur spontaneously, keep airway clear. Seek medical advice immediately. Never give anything by mouth to an unconscious person.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Most important symptoms and effects, both acute and delayed

Acute effects
Possible eye, skin, and respiratory tract irritation or burns.

Chronic effects
May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media
Not combustible. Use appropriate extinguishing media for material that is supplying fuel. Use water spray to cool the surrounding area and maintain fire temperature below decomposition temperature.

Extinguishing media which must not be used for safety reasons
No information available.

Special hazards arising from the substance or mixture

Special Hazard
At temperatures above 650 °C (1202 °F) the product will decompose to give off sulfur trioxide, an oxidizing agent that will support combustion. Sulfur trioxide will react with water to yield sulfuric acid.

Advice for firefighters

Firefighting measures
Cool exposed containers with water spray after extinguishing fire.

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

Explosion data

Sensitivity to Mechanical Impact
None.

Sensitivity to Static Discharge
None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear suitable protective clothing and gloves.

Environmental precautions

Environmental precautions
Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up small spills with inert absorbent material and place in a labeled waste container for disposal. Clean up large spills with vacuum truck. Provide adequate ventilation to spill area.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Keep container closed when not in use
Avoid contact with eyes, skin and clothing
Wear chemical splash goggles, gloves, and protective clothing when handling.
Wash thoroughly after handling
Avoid breathing vapors or mists
Use with adequate ventilation and employ respiratory protection where mist or vapors may be generated.
Do not take internally
FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Store in a cool, dry place away from direct heat.
Do not store below 40°F (5°C).
Product may congeal or stratify if cold.
Warm to 122° F (50° C) and mix well before using.
Keep material from coming in contact with common metals due to the corrosive nature of this product.

Incompatible products
Aluminum sulfate reacts with strong alkali to form aluminum hydroxide. This product may be weakly corrosive to carbon steel and incompatible with strong oxidizing agents, iron, copper, or copper alloys.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls
Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment

Eye/face Protection
Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection
Appropriate chemical resistant gloves should be worn

Skin and body protection
Standard work clothing and work shoes.

Respiratory protection
If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Other personal protection data
Eyewash fountains and safety showers must be easily accessible.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Color	colorless to yellow-brown or yellow-green
Appearance	clear
Odor	odorless
Odor threshold	No information available

Property	Values	Remarks / Method
pH	3.5	solution (1 %)
Melting / freezing point	-15 - -1 °C / 4 - 30 °F	No information available
Boiling point / boiling range	101 °C / 214 °F	No information available
Flash point	Not applicable	No information available
Evaporation rate	No information available	No information available
Flammability (solid, gas)	Not applicable	No information available
Flammability Limit in Air		
Upper flammability limit	Not applicable	No information available
Lower flammability limit	Not applicable	No information available
Vapor pressure	No information available	No information available
Vapor density	No information available	No information available

Specific gravity	1.31 - 1.33	No information available
Solubility (water)	Soluble	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	Not applicable	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	No information available	No information available

Other information

Density	11.075 lb/gal
Bulk Density	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
Volatile Organic Compound (VOC) content, wt.%	No information available
Percent Volatile, wt.%	No information available

10. STABILITY AND REACTIVITY

Reactivity

Reactivity
No data available.

Chemical stability

Chemical stability
Stable under normal conditions of handling, use and transportation.

Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
Not anticipated under normal or recommended handling and storage conditions.

Conditions to avoid

Conditions to avoid
High temperatures greater than 650° C (1202° F) as material may decompose to form aluminum oxide and sulfur trioxide (an oxidizing agent that supports combustion).

Incompatible materials

Materials to avoid
Aluminum sulfate reacts with strong alkali to form aluminum hydroxide. This product may be weakly corrosive to carbon steel and incompatible with strong oxidizing agents, iron, copper, or copper alloys.

Hazardous decomposition products

Hazardous decomposition products
Sulphur oxides. Aluminum oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Based on pH, this product is expected to cause severe eye irritation, possibly resulting in burns and eye damage. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact
Prolonged and/or repeated contact will cause severe skin irritation and burns.

Ingestion
May cause burns of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation
Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

Acute toxicity - Product Information

Oral LD50	6207 (mouse) [1]
Dermal LD50	No information available
Inhalation LC50	No information available

Acute toxicity - Component Information

Component	weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum sulfate 10043-01-3	< 30%	= 1930 mg/kg (Rat)	--	--

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Causes burns

Serious eye damage/eye irritation
Severe eye irritation- rabbit- 10 mg/24 hour [2]

Sensitization
No information available

Germ cell mutagenicity
No information available

Carcinogenicity
This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.

Reproductive toxicity
No information available

Specific target organ toxicity - Single exposure
No information available.

Specific target organ toxicity - Repeated exposure
No information available

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 7148 mg/kg

Other information
Unreported route- Guinea pig LD50: 490 mg/kg [3]
Unreported route- Mouse LD50: 520 mg/kg [3]
Unreported route- Rat LD50: 410 mg/kg [3]

[1] British Journal of Industrial Medicine. (British Medical Journal, 1172 Commonwealth Ave., Boston, MA 02134) V.1 - 1960-
[2] National Technical Information Service. (Springfield, VA 22161) Formerly US Clearinghouse for Scientific &; Technical Information) (NIOSH Registry of Toxic Effects of Chemical Substances RTECS#:BD1700000)
[3] Gigiena I Sanitariya. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1- 1936- (For English translation see Hygiene and Sanitation (USSR). (Springfield, VA) 1964-71. Discontinued). (NIOSH Registry of Toxic Effects of Chemical Substances RTECS#:BD1700000)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute aquatic toxicity - Product Information

Fish See ECOTOX: Ecotoxicological Database at http://www.epa.gov/ecotox

Crustacea See ECOTOX: Ecotoxicological Database at http://www.epa.gov/ecotox

Algae/aquatic plants No information available

Acute aquatic toxicity - Component Information

Component	weight-%	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
Aluminum sulfate 10043-01-3	< 30%	--	LC50 (96 h) = 100 mg/L (Carassius auratus) LC50 (96 h static) = 37 mg/L (Gambusia affinis)	EC50 (15 min) = 136 mg/L (Daphnia magna)

Persistence and degradability

Persistence and degradability
No information available

Bioaccumulative potential

Bioaccumulative potential
No information available

Mobility

Mobility
No information available

Results of PBT and vPvB assessment

PBT and vPvB assessment
No information available

Other adverse effects

Other information
No other ecological studies have been carried out on this product.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Do NOT mix with other chemical wastes. Do not put solutions containing this product into sewer systems. Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations.

Contaminated packaging
Since empty containers retain product residue, follow label warnings even after container is emptied.

RCRA

Is the unused product a RCRA hazardous waste if discarded? (Yes/No)	Yes
If yes, the EPA Hazardous Waste Code is:	D002 (corrosivity)

14. TRANSPORT INFORMATION

DOT Regulated

DOT UN/NA Number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (aluminum sulfate solution)
Hazard class	8
Packing group	III
ERG Number	154
Reportable Quantity (RQ)	17,500 lbs in solution
DOT Shipping Name > RQ	UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S. (aluminum sulfate solution), 8, PG III, RQ, ERG # 154

ICAO/IATA Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (aluminum sulfate solution)
Hazard class	8
Packing group	III
ERG Code	8L

IMDG Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (aluminum sulfate solution)
Hazard class	8
Packing group	III
EmS	F-A; S-B

15. REGULATORY INFORMATION

International Inventories

United States (TSCA)
Not determined

Australia (AICS)
Not determined

Canada (DSL)
Not determined

Canada (NDSL)
Not determined

China (IECSC)
Not determined

European Union (EINECS)
Not determined

European Union (ELINCS)
Not determined

Japan (ENCS)
Not determined

South Korea (KECL)
Not determined

Philippines (PICCS)
Not determined

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - China Inventory of Existing Chemical Substances
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Component	CERCLA/SARA Hazardous Substance RQ	CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs	Calculated Product RQ
Aluminum sulfate 10043-01-3	5000 lb final RQ; 2270 kg final RQ	--	17,500 lbs in solution

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Priority Pollutants	CWA - Toxic Pollutants
Aluminum sulfate 10043-01-3	Present	5000 lb RQ	--	--

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Aluminum sulfate 10043-01-3	
Massachusetts Right to Know Law	Present
Minnesota Hazardous Substance List	Present
New Jersey Right to Know List	sn 0068
Pennsylvania Right to Know List	Environmental hazard

16. OTHER INFORMATION

NFPA Rating	Health - 2	Flammability - 0	Instability - 0	Special Hazard -
HMIS Rating	Health - 2	Flammability - 0	Physical hazards - 0	Personal protection - B

Product code 3204M

Revision date 2020-Dec-18

Revision number 2

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.

End of Safety Data Sheet