SAFETY DATA SHEET

Usalco

Certified to NSF/ANSI/CAN 61

MUL = 150 mg/L (dry basis)

Revision date 03-Jul-2025 **Revision Number** 7

1. Identification

Product identifier

Product Name Aluminum Sulfate Solution, Iron Free

Other means of identification

Product Code(s) 3207Z

UN number or ID number UN3264

Synonyms Alum Sulfuric Acid, Aluminum Salt (3:2)

Recommended use of the chemical and restrictions on use

Recommended use Coagulating and Flocculating agent. Phosphorous removal. Chemical intermediate.

Restrictions on use None known.

Details of the supplier of the safety data sheet

Supplier Address
USALCO, LLC
2601 Cannery Ave.
Baltimore, MD 21226
+1-800-453-2586 Hours: Monday - Friday 9:00 - 5:00 CST (Central Standard Time)
Hours: Monday-Friday 9:00-5:00 CST (Central Standard Time)

Manufacturer Address
USALCO, LLC
2601 Cannery Ave.
Baltimore, MD 21226

Contact Point sds@usalco.com

Emergency Telephone CHEMTREC: (800) 424-9300
Outside USA - +1 (703) 527-3887 collect calls accepted

2. Hazard(s) identification

Classification

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

Hazards not otherwise classified (HNOC)
Not applicable.

Label elements

DANGER

Hazard statements

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

Appearance Clear **Physical state** Liquid **Odor** No appreciable odor

Precautionary Statements - Prevention

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

Precautionary Statements - Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
Specific treatment (See Section 4. First aid measures – Skin contact).
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Get emergency medical help immediately.
Wash contaminated clothing before reuse.
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 in accordance with local, regional, national, and international regulations as applicable.

Other information

May be harmful if swallowed.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Synonyms Alum. Sulfuric Acid, Aluminum Salt (3:2).

Chemical name	CAS No	Weight-%	Trade secret
Water	7732-18-5	>70%	*
Aluminum sulfate	10043-01-3	<30%	*

*The exact percentage (concentration) of composition has been withheld as a trade secret. While some components 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

Description of first aid measures

General advice Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

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

Eye contact Remove contact lenses, if worn. Immediately flush eyes for 5 to 10 minutes with plenty of water and keep eyelids open as much as possible. 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. Get medical attention. Never give anything by mouth to an unconscious person.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms Skin, eye and respiratory tract irritation. May cause redness and tearing of the eyes. Burning sensation. Itching. Rashes. Redness. Dermatitis. Difficulty in breathing. Coughing and/ or wheezing. Stomach pains.

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

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.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical 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.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Special protective equipment for Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

fire-fighters Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel. Cool containers with flooding quantities of water until well after fire is out.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective clothing and gloves.

Other information Refer to protective measures listed in Sections 7 and 8.

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 Stop leaks. Use absorbent material to clean up spills. Place in labeled waste container for disposal. 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 skin, eyes or 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 spray may be generated. Do not take internally. FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Storage Conditions Avoid storing at temperatures near or below freezing point. Keep material from coming into contact with common metals due to the corrosive nature of this product. Do not store below 40 °F (4 °C), product may congeal or stratify if cold. Store in a cool, dry place away from direct heat.

Packaging materials Store in corrosion resistant container with a resistant inner liner.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Aluminum sulfate 10043-01-3	-	(vacated) TWA: 2 mg/m^3 Al Aluminum	TWA: 2 mg/m^3 Al

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological 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.

Environmental exposure controls Do not allow liquid to enter streams or waterways.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Color	Colorless to yellow-brown or blue-green
Odor	No appreciable odor
Odor threshold	Not applicable.

Property	**Values**	**Remarks • Method**
pH	1.6 - 2.4	As is
Melting point / freezing point	-10 - -1 °C (5 - 30 °F)	
Boiling point / boiling range	~ 101 (214 °F)	
Flash point	Not applicable.	
Evaporation rate	Not determined.	
Flammability (solid, gas)	Not applicable.	
Flammability Limit in Air		
Upper flammability or explosive limits	Not applicable.	
Lower flammability or explosive limits	Not applicable.	
Vapor pressure	3.11 kPa	@ 25 °C
Relative vapor density	No data available.	
Relative density	1.293 - 1.333	
Water solubility	Soluble below pH 4	
Solubility(ies)		
Partition coefficient	Not determined.	
Autoignition temperature	Not applicable.	
Decomposition temperature	650 - 850 °C / 1,202 - 1,562 °F	
Kinematic viscosity	Not determined.	
Dynamic viscosity	30 - 50 cps	Brookfield @ 25 °C

Other information

Explosive properties	Not an explosive.
Oxidizing properties	Not expected to be oxidizing based on the chemical structure.
VOC Content (%)	No information available
Liquid Density	10.78 - 11.11 lbs./gal.

10. Stability and reactivity

Reactivity	Reacts with strong alkalis. May react with metals to release flammable hydrogen gas.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Not anticipated under normal or recommended handling and storage conditions.
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	This product reacts with strong alkali to form aluminum hydroxide. This product may be weakly corrosive to carbon and stainless steel and incompatible with strong oxidizing agents, iron, copper or copper alloys.
Hazardous decomposition products	Thermal decomposition products include oxides of aluminum and sulfur.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.
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. 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 irritation of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Skin contact: Adverse symptoms may include the following: irritation and redness. Eye contact: Adverse symptoms may include the following: watering, redness. and irritation. Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing. Ingestion: Adverse symptoms may include the following: stomach pains, gastrointestinal irritation, nausea, vomiting and diarrhea.

Acute toxicity

Numerical measures of toxicity

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

ATEmix (oral)	7148 mg/kg
Oral LD50	6207 (Mouse) British Journal of Medicine. (British Medical Journal, 1172 Commonwealth Ave., Boston, MA 02134) V.1 - 1960
Component Information	Unreported route - Mouse LD50: 520 mg/kg Unreported route - Mouse LD50: 520 mg/kg Unreported route - Rat LD50: 410 mg/kg Gigiena 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).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Aluminum sulfate 10043-01-3	= 1930 mg/kg (Rat)	-	-

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

Skin corrosion/irritation Irritating to skin.

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

National Technical Information Services. (Springfield, VA 22161) (Formerly US Clearinghouse for Scientific& Technical Information) (NIOSH Registry of Toxic Effects of Chemical Substances RTECS#: BD1700000).

Respiratory or skin sensitization No data available.

Germ cell mutagenicity No data 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 None known.

Developmental toxicity None known.

STOT - single exposure No data available.

STOT - repeated exposure No data available.

Target organ effects Respiratory system, Skin.

Aspiration hazard No data available.

Other adverse effects None known.

Interactive effects None known.

12. Ecological information

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

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

Algae/aquatic plants - No information available

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Aluminum sulfate 10043-01-3	--	LC50 (96 h) = 100 mg/L (Carassius auratus) LC50 (96 h static) = 37 mg/L (Gambusia affinis)	-	-

Persistence and degradability Not determined.

Bioaccumulation	No information available.
Mobility	Not determined.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	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.
US EPA Waste Number	D002 (Corrosivity).

14. Transport information

DOT Regulated

UN number or ID number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Aluminum Sulfate Solution)
Transport hazard class(es)	8
Packing group	III
DOT Reportable Quantity lbs. (calculated)	17,500 lbs
Emergency Response Guide Number	154

TDG Regulated

UN number or ID number	UN3264
UN proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Aluminum Sulfate Solution)
Transport hazard class(es)	8
Packing group	III
Technical Name Description	Aluminum Sulfate Solution

IATA Regulated

UN number or ID number	UN3264
UN proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Aluminum Sulfate Solution)
Transport hazard class(es)	8
Packing group	III
ERG Code	8L

IMDG Regulated

UN number or ID number	UN3264
UN proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Aluminum Sulfate Solution)
Transport hazard class(es)	8
Packing group	III
EmS-No	F-A; S-B

15. Regulatory information

International Inventories

TSCA All ingredients are on the inventory or exempt from listing.

Chemical name	CAS No	US TSCA Inventory listing	US TSCA inactive/active designation
Water	7732-18-5	Present	Active
Aluminum sulfate	10043-01-3	Present	Active

DSL/NDSL All ingredients are on the DSL inventory or exempt from listing. None of the ingredients are on the NDSL inventory.
EINECS/ELINCS All ingredients are on the EINECS inventory or are exempt from listing. None of the ingredients are on the ELINCS inventory.
ENCS All ingredients are on the inventory or exempt from listing.
IECSC All ingredients are on the inventory or exempt from listing.
KECL All ingredients are on the inventory or exempt from listing.
PICCS All ingredients are on the inventory or exempt from listing.
AICS All ingredients are on the inventory or exempt from listing.

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

US Federal Regulations

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.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

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).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Aluminum sulfate 10043-01-3	5000 lb	-	-	X

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).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Aluminum sulfate 10043-01-3	5000 lbs. final RQ 2267 kg final RQ	-	RQ 17,500 lbs. as solution RQ 7,937 kg as solution

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Aluminum sulfate 10043-01-3	0068	Present	Present

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable.

16. Other information

NFPA	**Health hazards** 2	**Flammability** 0	**Instability** 0	**Special hazards**
HMIS	**Health hazards** 2	**Flammability** 0	**Physical hazards** 0	**Personal protection** B

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 03-Jul-2025
Revision Note .

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