SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Aluminum nitrate, nonahydrate
CAS number	7784-27-2
Synonyms	Aluminum trinitrate nonahydrate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Oxidizing solids	Category 3

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal Word	Warning
Hazard statements	Causes skin irritation. Causes serious eye irritation. May intensify fire; oxidizer.
Precautionary statements:	
Prevention:	Wash face, hands and any exposed skin thoroughly after handling. Keep away from heat/sparks/open flames/hot surface. No smoking. Keep/store away from clothing and other combustible materials. Take any precaution to avoid micing combustibles. Wear protective gloves.
Response:	IF CASE OF FIRE: Use water to extinguish. Do not use dry chemicals or foams. CO2 or Halon may provide limited control. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Disposal:	Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May be harmful if swallowed.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Aluminum Nitrate, Nonahydrate	Aluminum trinitrate nonahydrate	7784-27-2	100%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact	Wash off immediately with soap and plenty of water, removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.
In case of eye contact	Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a physician.
If swallowed	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. Causes eye irritation. May cause coughing and shortness of breath. Somnolence. It may affect metabolism. Weight loss/gain. May cause methemoglobinemia and cyanosis. May cause digestive (gastrointestinal) tract irritation. May cause nausea and vomiting. Ataxia. Headache. Weakness. May cause drowsiness or dizziness. Convulsions. Fatigue. Irregular heartbeat. Weak, rapic pulse or rapid heat rate (Tachycardia). Seizures. Coma. Sweating and flushing of skin. Visual disturbances. It may affect the kidneys. It may affect the blood. Central nervous system effects.

4.3 Indication of any immediate medical attention and special treatment needed

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessaru protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste. Physician: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Water. CO2 may be of no value in extinguishing fires involving oxidizers and may only provide limited control.
Unsuitable extinguishing media	Dry chemical. Foam. Halons.

5.2 Specific hazards arising from the substance or mixture

Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc). The product is not flammable, but it may cause fire when in contact with other material. Contact with combustible or organic materials may cause fire. Will accelerate burning when involved in a fire. Container explosion may occur under fire conditions or when heated. Hazardous combustion products: Nitrogen oxides, aluminum oxides.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point	No data available.

Autoignition Temperature No information available.

Explosion limits

Upper	No data available.
Lower	No data available.
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid dust formation. Keep combustibles (wood, paper, oil, clothing, etc) away from spilled material. Remove all sources of ignition.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Stop leak if you can do it without risk. Cover with plastic sheet to prevent prevent spreading. Sweep up and shovel. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Do not use combustible materials such as paper towls, sawdust, clothing, etc. to clean up spill. Clean contaminated surface thoroughly.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personl protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Do not ingest. Do not breathe dust. When using do not smoke. Keep away from combustible material. Handle in accordance with good industrial hygiene and safety practice.

Hygiene measures

Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immedately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Do not store near combustible materials. Store at room temperature in the orginal container. Store away form incompatible materials. Store in a segregated and approved area.

Incompatibilities
Reducing agents, powdered metals, organic materials, combustible materials.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
No information available.

US. ACGIH Threshold Limit Values
No information available.

US. NIOSH: Pocket Guide to Chemical Hazards
No information available.

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Ensure adequate ventilation, espicially in confined areas. Use process enclosures. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborned contaminats below the exposure limit.

Personal protective equipment

Eye/face protection
Goggles or safety glasses with side shields.

Skin and body protection
Chemical resistant protective suit. Gloves. Long sleeved clothing.

Respiratory protection
Effective dust mask or wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid Crystal
Appearance	White
Odor	Odorless
Odor Threshold	No information available
pH	2.5 - 3.5 (5%)
Melting Point/Range	73 °C / 163 °F
Boiling Point/Range	No information available
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available.
Vapor Density	No information available.
Density	No information available.
Solubility	Very soluble in water, alcohol, slightly soluble in alcohol
Partition coefficient; n-octanol/water	No information available.
Autoignition Temp	No information available.
Decomposition Temp	135 °C / 275 °F
Viscosity	No information available.
Molecular Formula	Al(NO3)3 . 9H2O
Molecular Weight	375.13
VOC Content(%)	No information available.
Oxidizing properties	No information available.

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Oxidizer, reacts with reducing agents, organic material, combustible materials, and powdered metals.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid dust formation. Heat. Incompatible materials.

10.5 Incompatible materials

Reducing agents. Powdered metals. Organic materials. Combustible materials.

10.6 Hazardous decomposition products

Aluminum oxide, nitrogen oxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aluminum Nitrate, Nonahydrate	3671 mg/kg (rat)	-	-
	3980 mg/kg (mouse)	-	-

Skin corrosion/irritation

Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scalling and/or blistering.

Serious eye damage/eye irritation

Causes eye irritation. Symptoms may includes stinging, tearing, redness.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Aluminium Nitrate, Nonahydrate	7784-27-2	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

No information available

Specific target organ toxicity - repeated exposure

No information available.

Reproductive toxicity

No data is available.

Chronic effects

This product is also a nitrate, therefore nitrate poisoning can occur. Prolonged or repeated nitrate ingestion may affect the urinary system(kidneys) and also may affect the blood, resulting in methemoglobin formation with attendant cyanosis, anorexia, hyperpnea and later dyspnea and chocolate brown colored blood. The primary toxic effects of nitrates include orthostatic hypotension and methemoglobinemia, Other symptoms include muscular weakness, faintness, dizziness, lightheadedness, fatigue, throbbing headache, mental impairment, incoordination, seizures,and convulsions, bradycardia or tachydardia, dysrhythmias, dyspnea. Prolonged or repeated ingestion of large amountsof
nitrates may affect the liver and can cause gastroenteritis, nausea, vomiting, abdominal pain, weight loss. Possible coma and death. Chronic ingestion of aluminum may cause Aluminum Related Bone Disease or aluminum-induced Osteomalacia with fracturing Osteodystrophy, microcytic anemia, weakness, fatigue, visual and auditory hallucinations, memory loss, speech and language impairment (dysarthria, stuttering, stammering, anomia, hypofluency, aphasia and eventually, mutism), epileptic seizures (focal or grand mal), motor
disturbance (tremors, myoclonic jerks, ataxia, convulsions, asterixis, motor apraxia,muscle fatigue), and dementia (personality changes, altered mood, depression,diminished alertness, lethargy, 'clouding of the sensorium', intellectual deterioration, obtundation, coma), and altered EEG.

11.2 Additional Information
No information available.

SECTION 12: Ecological information

12.1 Toxicity
No information available.

12.2 Persistence and degradability
No information available.

12.3 Bio accumulative potential
No information available.

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-No	UN1438
Proper Shipping Name	ALUMINUM NITRATE
Hazard Class	5.1
Packing Group	III

IMDG

UN-No	UN1438
Proper Shipping Name	ALUMINUM NITRATE
Hazard Class	5.1
Packing Group	III

IATA

UN-No	UN1438
Proper Shipping Name	ALUMINUM NITRATE
Hazard Class	5.1
Packing Group	III

SECTION 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 listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed

SARA 304 Emergency release notification

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Not listed.

SARA 313 (TRI reporting)

Not regulated

Other federal regulations

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

Not regulated

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

Not regulated.

Safe Drinking Water Act

Not regulated

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed

US state regulations

US. Massachusetts RTK - Substance List

Not listed

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

Listed

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

Not listed

California Proposition 65

Not listed

SECTION 16: Other information

Issue date: 03/01/2029
Revision 1: 07/31/2024

SECTION 17: Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.