1 Identification of substance and company

Product name: **Aluminum nitrate, nonahydrate**

Product code: 15932, 90263, C2839

Relevant use and restrictions on use: Research and product development

Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: 210-691-2000
Fax: 210-691-2600
Web site: www.noahtech.com

Emergency information:
CHEMTREC
800-424-9300

2 Hazards identification

**Emergency Overview:**

**Pictogram(s):**

**Signal word(s):** Danger

**Hazard statements:**
H272 May intensify fire; oxidizer
H315 Causes skin irritation
H319 Causes serious eye irritation

**Precautionary statements:**
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P220 Keep/Store away from clothing/combustible materials
P221 Take any precaution to avoid mixing with combustibles
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
P301+312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell
P302+352 IF ON SKIN: Wash with plenty of soap and water
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container to an approved waste disposal plant

**GHS Classification:**
Oxidizing solid: 2
Skin irritation - 2
Eye irritation - 2A

**Hazards not otherwise classified:** None

**HMIS ratings (scale 0-4):**
Health hazard: 1
Flammability: 0
Physical hazard: 1

3 Composition/Information on ingredients

**Chemical name:** Aluminum nitrate, nonahydrate

**CAS number:** 7784-27-2

**EC number:** 236-751-8

**Formula:** Al(NO₃)₃·9H₂O

**Synonyms:** Nitric acid, aluminum salt

**Ingredients of known acute toxicity:** Aluminum nitrate, nonahydrate

4 First aid measures

**After inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Seek immediate medical advice

**After skin contact:** Instantly wash with water and soap and rinse thoroughly
Seek immediate medical advice

After eye contact:
Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers.
Seek immediate medical advice

After ingestion:
If conscious, rinse mouth out with water and seek immediate medical advice. Never give anything by mouth to an unconscious individual.

Information for doctor:
Show this safety data sheet to the doctor in attendance

Symptoms/effects; acute and delayed:
Coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting
Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis

Immediate medical attention and special treatment needed:
Large doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents:
Use extinguishing media most suitable to surrounding fire conditions

Special hazards caused by the material, its products of combustion or resulting gases:
In case of fire, the following can be released:
Oxides of aluminum and nitrogen (NOx)

Special fire fighting procedures:
Wear SCBA
Always wear fully protective fire fighting equipment/clothing in fire situations

Unusual fire and explosion hazard:
This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition

6 Accidental release measures

Person-related safety precautions:
Wear personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Measures for environmental protection:
Do not allow material to be released to the environment without proper governmental permits
Dispose of contaminated material as waste according to item 13

Measures for cleaning/collecting:
Ventilate and wash spill site after material removal is complete

Additional information:
See Section 7 for information on safe handling
See Section 8 for information on personal protective equipment
See Section 13 for information on disposal
See Section 15 for regulatory information

7 Handling and storage

Information for safe handling:
Keep containers tightly sealed
Store in cool, dry place in tightly closed containers
Ensure good ventilation/exhaustion at the workplace

Information about protection against explosions and fires:
Oxidizer. Contact with reducing agents, combustible material or flammables may cause fire.

Storage requirements to be met by storerooms and containers:
No special requirements

Incompatibility (avoid contact with):
Store away from strong reducing agents, organics, flammables and powdered metals

Further information about storage conditions:
Keep container tightly sealed
Store in cool, dry conditions in well sealed containers
Keep from contact with clothing and other combustible materials

8 Exposure controls/personal protection

Ventilation requirements:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute

Components with exposure limits that require monitoring:
ACGIH TLV: TWA 2 mg(Al)/m3
OSHA PEL: TWA 2 mg(Al)/m3

Additional information:
No data

General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be adhered to
Keep away from foodstuffs, beverages and food
Instantly remove any soiled and impregnated garments
Wash hands during breaks and at the end of the work
Avoid contact with the eyes and skin

Personal protective equipment:
Respiratory protection:
Use suitable respirator when high concentrations are present
(Use only NIOSH or CEN approved Equipment)
Use only NIOSH/MESA or CEN approved respirators
Hand protection:
Impervious gloves. Check protective gloves prior to each use for their proper condition.
Eye protection:
Safety glasses
Skin protection:
Protective work clothing

Additional protective equipment:
Sufficient to prevent contact
Emergency eyewash and safety shower
9 Physical and chemical properties

Physical state: Crystalline powder
Color: White
Odor: Odorless
Odor threshold: No data available
Molecular Weight (Calculated): 375.13
pH: 2.5 - 3.5 at 50 g/L @ 25 °C
Melting point/freezing point/range: 73.5 °C
Boiling point/range: No data available
Sublimation temperature/start: No data available
Decomposition temperature: 135 °C
Flammability (solid, gas): Non-flammable but contact with combustible material may cause fire
Flash point: Not applicable
Autoignition temperature: Not applicable
Danger of explosion: No data available
Flammable limits:
Lower: Not applicable
Upper: Not applicable
Evaporation Rate: No data available
Vapor pressure (mm Hg): No data available
Vapor density: No data available
Specific gravity d
20: No data available
Bulk density: No data available
Solubility in/Miscibility with water: 735 g/L @ 25 °C
Partition coefficient n-octanol/water: No data available
Viscosity: No data available
Other information: No additional data available

10 Stability and reactivity

Reactivity: No decomposition if used and stored according to specifications
See section 7 for information on proper handling and storage
Chemical stability: Stable
Possibility of hazardous reactions: The heat of reaction with reducing agents or combustibles may cause ignition
Conditions to be avoided: Moisture (extremely hygroscopic)
Materials to be avoided:
Strong acids
Reducing agents
Metal powders
Cyanides
Combustible materials
Oxidizable substances
Dangerous reactions: Mixing with acids, combustible materials, or readily oxidizable substances may explode when subjected to slight friction
Hazardous decomposition products: Oxides of aluminum and nitrogen (NOx)
(thermal and other)

11 Toxicological information

LD/LC50 values that are relevant for classification:
oral-rat LD
50: 3671 mg/kg
Irritation or corrosion of skin: No data available
Irritation or corrosion of eyes: No data available
Sensitization:
Does not cause sensitization
Potential health effects:
Inhalation: Causes irritation to the upper respiratory tract and mucous membranes
Ingestion: Swallowing may lead to a corrosive effect on mouth and throat
Skin:
Causes moderate irritation
Eyes:
Causes severe irritation
Signs and symptoms of exposure:
Harmful if ingested, inhaled or absorbed through the skin. Product causes irritation of the eyes, skin, upper respiratory tract and mucous membranes.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known
Carcinogenicity:
Not identified as a carcinogen

12 Ecotoxicological information

Toxicity:
Toxicity to fish: No data available
Toxicity to daphnia and other aquatic invertebrates: No data available
Toxicity to algae: No data available
Persistence and degradability:
Biodegradability: No data available
Bioaccumulative potential: No data available
Bioaccumulation: No data available
Mobility in soil: No data available
General:
Do not allow material to be released to the environment without proper governmental permits
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system

13 Disposal considerations
Recommendation:
Consult state, local or national regulation for proper disposal
Allow professional disposal company to handle waste
Must be specially treated under adherence to official regulations
Unclean packagings recommendation:
Disposal must be made according to official regulations

14 Transport information
Land transport DOT

Proper shipping name: Aluminum nitrate
DOT Hazard Class: 5.1
UN Identification number: UN1438
Label(s): Oxidizer
Packing group: III
North American Emergency Response
Guidebook No.: 140

Air transport ICAO-TI and IATA-DGR:

Proper shipping name: Aluminum nitrate
DOT Hazard Class: 5.1
UN Identification number: UN1438
Label(s): Oxidizer
Packing group: III
North American Emergency Response
Guidebook No.: 140

UPS Ground / FedEx Ground

Proper shipping name: Aluminum nitrate
DOT Hazard Class: 5.1
UN Identification number: UN1438
Label(s): Oxidizer
Packing group: III
North American Emergency Response
Guidebook No.: 140

UPS Air
FORBIDDEN

15 Regulatory information
SARA Section 302 Extremely Hazardous components and corresponding TPOs: Not subject
SARA Section 311 / 312 hazards: Acute Health Hazard
SARA Section 313 components: Not subject
California Proposition 65 components: Not subject
TSCA: This product is registered with TSCA Inventory
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