



# SAFETY DATA SHEET

Preparation Date: 3/1/2019 Revision date 3/1/2019 Revision Number: G1

# 1. IDENTIFICATION

Product identifier

Product code: A1990

Product Name: ALUMINUM NITRATE, NONAHYDRATE, CRYSTAL, TECHNICAL

Other means of identification

**Synonyms:** Aluminum trinitrate nonahydrate

Nitric acid, Aluminum salt, nonahydrate

CAS #: 7784-27-2
RTECS # BD1050000
CI#: Not available

Recommended use of the chemical and restrictions on use

**Recommended use:** Petroleum Production and Refining. Laboratory reagent. Research and

Development.

Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp

14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person:Tom Tyner (USA - West Coast)Contact Person:Ibad Tirmiz (USA - East Coast)

# 2. HAZARDS IDENTIFICATION

#### Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

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

### **Label elements**

# Warning

# Hazard statements

Causes skin irritation
Causes serious eye irritation
May intensify fire; oxidizer



#### Hazards not otherwise classified (HNOC)

Not Applicable

#### Other hazards

May be harmful if swallowed

#### **Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling Keep away from heat/sparks/open flames/hot surfaces. — No smoking Keep/Store away from clothing and other combustible materials Take any precaution to avoid mixing with combustibles Wear protective gloves

#### **Precautionary Statements - Response**

IN 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

#### **Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

# 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
Aluminum Nitrate, Nonahydrate	7784-27-2	100

### 4. FIRST AID MEASURES

First aid measures

Product code: A1990

General Advice: National Capital Poison Center in the United States can provide assistance if you

have a poison emergency and need to talk to a poison specialist. Call

1-800-222-1222.

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.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a

physician.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give

oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an

unconscious person. Consult a physician if necessary.

### Most important symptoms and effects, both acute and delayed

Symptoms 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, rapid pulse or rapid heart 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

#### Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

#### **Protection of first-aiders**

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

### 5. FIRE-FIGHTING MEASURES

**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.

Specific hazards arising from the chemical

Hazardous combustion products If it is involved in a fire the following can be released:.

Nitrogen oxides (NOx). Aluminum oxides.

Specific hazards 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.

# **Special Protective Actions for Firefighters**

Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus

pressure-demand, MSHA/NIOSH (approved or equivalent)

and full protective gear

# 6. ACCIDENTAL RELEASE MEASURES

# Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** 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.

**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.

### Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent

spreading.

**Methods for cleaning up**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 towels, sawdust, clothing, etc. to clean up spill. Clean contaminated

surface thoroughly.

# 7. HANDLING AND STORAGE

# Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

# Safe Handling Advice

Wear personal 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.

#### Conditions for safe storage, including any incompatibilities

# **Technical Measures/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 original container. Store away from incompatible materials. Store in a segregated and approved area.

### **Incompatible Materials:**

Reducing agents Powdered metals Organic materials Combustible materials

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

# National occupational exposure limits

#### **United States**

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Aluminum Nitrate,	7784-27-2	None	None	None	None
Nonahydrate					

#### Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Aluminum Nitrate,	7784-27-2	2 mg/m <sup>3</sup> TWA(as Al)	None	None	2 mg/m³ TWAEV(as
Nonahydrate					AI)

#### **Australia and Mexico**

Component	CAS No	Australia	Mexico
Aluminum Nitrate, Nonahydrate	7784-27-2	None	None

# **Appropriate engineering controls**

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. 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 airborne contaminants below the exposure limit.

# Individual protection measures, such as personal protective equipment

# **Personal Protective Equipment**

**Eye 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.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or

smoke. Wash hands before breaks and immediately after handling the product

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:Appearance:Color:SolidCrystals.White.

Odor: Taste Formula

Odorless. No information available. Al(NO3)3.9H2O

**Page** 

Molecular/Formula weight (g/mole): Flammability (solid, gas)

375.13 g/mol no data available

No information available

No information available

**Lower Explosion Limit (%):** 

Flashpoint (°C/°F):

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

No information available

Decomposition temperature(°C/°F):

Upper Explosion Limit (%): Melting point/range(°C/°F):

No information available

73°C/163°F

135°C/275°F

Density (g/cm3):

Boiling point/range(°C/°F): Bulk density:

No information available

No information available

No information available

Specific gravity: pH

No information available

**рн** 2.5-3.5 (5%) Vapor pressure @ 20°C (kPa):

No information available

Evaporation rate: Vapor density:

No information available 
No information available

VOC content (g/L):
No information available

Odor threshold (ppm): Partition coefficient

No information available (n-octanol/water):

No information available

Viscosity:

No information available

Miscibility: Solubility:

No information available

Very soluble in water Very soluble in alcohol

Very slightly soluble in Acetone Practically insoluble in Ethyl Acetate Practically insoluble in pyridine

# 10. STABILITY AND REACTIVITY

Reactivity

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

**Chemical stability** 

**Stability:** Stable under recommended storage conditions.

<u>Possibility of Hazardous Reactions:</u> Hazardous polymerization does not occur

**Conditions to avoid:** Avoid dust formation. Heat. Incompatible materials.

**Incompatible Materials:** Reducing agents

Powdered metals Organic materials Combustible materials

Hazardous decomposition

products:

Aluminum oxide. Nitrogen oxides (NOx).

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

#### 11. TOXICOLOGICAL INFORMATION

Product code: A1990 Product name: ALUMINUM NITRATE, NONAHYDRATE, CRYSTAL, TECHNICAL

**Page** 

#### Information on likely routes of exposure

### **Principal Routes of Exposure:**

Ingestion. Inhalation. Skin.

#### **Acute Toxicity**

### **Component Information**

Aluminum Nitrate, Nonahydrate

CAS No 7784-27-2

LD50/oral/rat = 3671 mg/kg Oral LD50 Rat

LD50/oral/mouse = 3980 mg/kg oral LD50 mouse

**LD50/dermal/rabbit** = No information available

**LD50/dermal/rat** = No information available

**LC50/inhalation/rat** = No information available

**LC50/inhalation/mouse** = No information available

Other LD50 or LC50information = No information available

#### **Product Information**

LD50/oral/rat =

Value - Acute Tox = No information available

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

Value - Acute Tox = No information available

LD50/dermal/rat

**VALUE - Acute Tox Dermal =** No information available

LC50/inhalation/rat

**VALUE-Vapor** = No information available

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = No information available

LC50/Inhalation/mouse

**VALUE-Vapor** = No information available

**VALUE - Gas =** No information available

**VALUE - Dust/Mist =** No information available

**Symptoms** 

**Skin Contact:** Causes skin irritation. Skin contact may result in redness, pain, inflammation,

itching, scaling, and/or blistering.

**Eye Contact:** Causes eye irritation. Symptoms may include stinging, tearing, redness.

**Inhalation** May cause respiratory tract irritation. Symptoms may include coughing and

shortness of breath.

**Ingestion** Can cause nausea, vomiting, hypermotility, diarrhea. It produces flushing of the

face, mild decrease of blood pressure, rash, ringing in the ears, and nerve

Product code: A1990 Product name: ALUMINUM NITRATE,

NONAHYDRATE, CRYSTAL, TECHNICAL Page

deafness. May affect behavior/central nervous system (somnolence), respiration(respiratory depression). It may cause anorexia. Inorganic nitrates can be reduced to nitrites in the stomach and can induce Methemoglobinemia, an increase in the level of methemoglobin in the blood, resulting in hypoxia (decreased blood oxygen), difficulty breathing, and cyanosis (a bluish discoloration of the skin and lips due to deficient oxygenation the blood). Other symptoms of Methemoglobinemia may include chocolate brown colored blood, weakness, dizziness, lethargy, vertigo, lightheadedness, fatigue, lethargy, mental impairment, convulsions, syncope, irregular pulse, anorexia, decrease in blood pressure, headache, tingling, flushing, perspiration, circulatory collapse, loss of consciousness, seizures, coma, death. May affect urinary system (kidneys). May affect behavior/central nervous system (somnolence, ataxia). May affect metabolism (weight loss).

**Aspiration hazard** 

No information available.

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

**Chronic Toxicity** 

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 amounts of 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.

**Sensitization:** No information available.

Mutagenic Effects: No information available

**Carcinogenic effects:** Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Aluminum Nitrate, Nonahydrate	7784-27-2	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

Product code: A1990

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects:No information availableDevelopmental Effects:No information availableTeratogenic Effects:No information available

Specific Target Organ Toxicity

STOT - single exposure
STOT - repeated exposure
Target Organs:

No information available.
No information available.
Blood. Kidneys. Liver.

# 12. ECOLOGICAL INFORMATION

# **Ecotoxicity**

**Ecotoxicity effects:** No data available.

Persistence and degradability: No information available

**Bioaccumulative potential:** No information available.

Mobility in soilNo information availableOther adverse effectsNo information available.

# 13. DISPOSAL CONSIDERATIONS

#### **Disposal Methods**

# Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

#### Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal Do not re-use empty containers Dispose of as unused product.

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Aluminum Nitrate,	7784-27-2	None	None	None	None
Nonahydrate					

# 14. TRANSPORT INFORMATION

DOT

**UN-No:** UN1438

Proper Shipping Name: Aluminum nitrate

Hazard Class 5.1

Subsidiary Class No information available

Packing group: III Emergency Response Guide 140

Number

Product code: A1990

Marine PollutantNo data availableDOT RQ (lbs):No information availableSpecial ProvisionsA1, A29, IB8, IP3, T1, TP33Symbol(s):No information available

**Description:** UN1438, Aluminum nitrate, 5.1, III

TDG (Canada)

**UN-No:** UN1438

Proper Shipping Name: Aluminum nitrate

Hazard Class 5.1

Subsidiary Risk: No information available

Packing Group:

Marine Pollutant No Information available

**Description:** UN1438, Aluminum nitrate, 5.1, III

**ADR** 

UN Number UN1438

Proper Shipping Name: Aluminium nitrate

Transport hazard class(es) 5.1
Packing group III

Subsidiary Risk: No information available

**Description:** UN1438, Aluminium nitrate, 5.1, III

**IMDG** 

**UN-No:** UN1438

**Proper Shipping Name:** Aluminum nitrate

Hazard Class: 5.1

Subsidiary Risk: No information available

Packing Group:

Marine Pollutant No information available

EMS: F-A

**Description** UN1438, Aluminium nitrate, 5.1, III

**RID** 

UN Number UN1438

Proper Shipping Name: Aluminium nitrate

Transport hazard class(es) 5.1

Subsidiary Risk: No information available

Packing group

**Description:** UN1438, Aluminium nitrate, 5.1, III

ICAO (air)

**UN-No:** UN1438

Proper Shipping Name: Aluminium nitrate

Hazard Class 5.1

Subsidiary Risk: No information available

Packing Group: III

**Description:** UN1438, Aluminium nitrate, 5.1, III

IATA

UN Number UN1438

Proper Shipping Name: Aluminium nitrate

Transport hazard class(es) 5.1

Subsidiary Risk: No information available

Packing group III
Precautionary Statements - 5L

Response

Product code: A1990

Special Provisions Description:

No information available

UN1438, Aluminium nitrate, 5.1, III

# 15. REGULATORY INFORMATION

### International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia AICS	EINECS-No.
Aluminum Nitrate, Nonahydrate	7784-27-2	Exempt from listing on TSCA 8(b) Inventory since it is a hydrate. However the anhydrous form (CAS no. 13473-90-0) is listed as ACTIVE on the TSCA 8(b) Inventory.		Present	Not present	Present	Present	Not present

#### U.S. Regulations

Aluminum Nitrate, Nonahydrate

New Jersey RTK Hazardous Substance List: sn 3722 (as nitrate compounds)

New Jersey (EHS) List: SN 3722 500 lb. TPQ (as nitrate compounds)

New Jersey - Discharge Prevention - List of Hazardous Substances: Present (as nitrate compounds, water dissociable)

Minnesota - Hazardous Substance List: Present (as aluminum soluble salts)

California Directors List of Hazardous Substances: Present (as aluminum soluble salts)

# California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

# Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male	Female
				Reproductive	Reproductive
				Toxicity	Toxicity:
Aluminum Nitrate, Nonahydrate	7784-27-2	Not Listed	Not Listed	Not Listed	Not Listed

# CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Aluminum Nitrate,	7784-27-2	None	None	None	Nitrate compounds,	1.0% diminimis
Nonahydrate					water dissociable	concentration

#### U.S. TSCA

Component		TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Aluminum Nitrate, Nonahydrate	7784-27-2	Not Applicable	Not Applicable

#### Canada

#### WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Component Aluminum Nitrate, Nonahydrate 7784-27-2 ( 100 ) WHMIS 2015 Hazard Classification Oxidizing solids - Category 3: H272 May intensify fire, oxidizer.; Serious Eye Damage/Eye Irritation - Category 2A: H319 Causes serious eye irritation.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

#### **DSL/NDSL**

Component	CAS No	Canada (DSL)	Canada (NDSL)
Aluminum Nitrate, Nonahydrate	7784-27-2	Not Listed	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Aluminum Nitrate, Nonahydrate	7784-27-2	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject
		to Mandatory Reporting
Aluminum Nitrate, Nonahydrate	7784-27-2	Not listed

#### **EU Classification**

#### EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Aluminum Nitrate, Nonahydrate	7784-27-2	

#### EU - CLP (1272/2008)

#### R-phrase(s)

R 8 - Contact with combustible material may cause fire.

R36/38 - Irritating to eyes and skin

# S -phrase(s)

S17 - Keep away from combustible material

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S28 - After contact with skin, wash immediately with plenty of water

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Aluminum Nitrate, Nonahydrate	7784-27-2		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

# Indication of danger:

O - Oxidising.

#### Xi - Irritant





# **16. OTHER INFORMATION**

Preparation Date:3/1/2019Revision date3/1/2019Prepared by:Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet** 

Product code: A1990