Safety Data Sheet ALUMINIUM NITRATE Nonahydrate

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SECTION 1: Identification

GHS Product identifier

Product name	ALUMINIUM NITRATE Nonahydrate

Other means of identification

Product	Product Code
Aluminium Nitrate Nonahydrate AR	AA056
Aluminium Nitrate Nonahydrate LR	AL056
Aluminium Nitrate Nonahydrate TG	AT056

Recommended use of the chemical and restrictions on use

Textiles (mordant), leather tanning, manufacture of incandescent filaments, catalyst in petroleum refining, nucleonics, antiperspirant, nitrating agent, anticorrosion agent, uranium extraction and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Dangerous goods of Class 5.1 (Oxidizing Agent) are incompatible in a placard load with any of the following:
Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and Combustible liquids.

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 2
- Oxidizing solids, Cat. 2
- Skin corrosion/irritation, Cat. 2

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**
Hazard statement(s)	
H272	May intensify fire; oxidizer
H315	Causes skin irritation
H319	Causes serious eye irritation
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use agents recommended in Section 5 of SDS for extinction
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight	375.13

Component	Identification	Weight %
Aluminium nitrate nonahydrate	CAS no.: 7784-27-2	<= 100 %

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately, avoid becoming a casualty. Make patient comfortable, keep warm and at rest until fully recovered. If symptoms persist, obtain medical attention.
In case of skin contact	Rinse with plenty of water. Get medical attention if irritation develops and persists.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse

	contaminated water into the non-affected eye. If persistent irritation occurs, obtain medical attention.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO2 or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat.
Large fire: Flood fire area with water from a protected position. Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.

Specific hazards arising from the chemical
May liberate toxic fumes in fire such as nitrogen oxides.

Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. Can react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.

Special protective actions for fire-fighters
Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection. Full fire kit and breathing apparatus.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. For personal protection see section 8.

Environmental precautions
May contribute to the eutrophication of water supplies. Hazard for drinking water.

Methods and materials for containment and cleaning up
Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat.

Dry Spill Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area.

SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities
Store away from sources of heat and ignition. Store away from organic and combustible materials. Keep containers closed when not in use.

Corrosiveness: Will corrode some metals if combined with moisture.
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SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against
chemicals should comply with AS 3765 Clothing for Protection Against Hazardous
Chemicals.

Body protection
Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/ NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Deliquescent white crystals.
Color	White
Odor	Nil
Odor threshold	No data available.
Melting point/freezing point	73 °C
Boiling point or initial boiling point and boiling range	n/a

Flammability	Not flammable but may contribute to fire intensity
Lower and upper explosion limit/ flammability limit	No data available.
Flash point	n/a
Explosive properties	No data available.
Auto-ignition temperature	n/a
Decomposition temperature	135 °C
Oxidizing properties	Oxidiser.
pH	2-4 (50 g/l, H2O)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Very soluble. Solubility in Organic Solvents: Very soluble in alcohol. Very slightly soluble in acetone. Almost insoluble in ethyl acetate and pyridine.
Partition coefficient n-octanol/ water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	No data available.
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
No data available.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable.

Possibility of hazardous reactions
May react violently in contact with combustible material, reducing agents, cyanides, easters, metals in powder form, strong acids and isocyanates. Contact with some metals may be explosive.

Hazardous Polymerization: Will not occur.

Conditions to avoid
None under normal use conditions.

Avoid storing in direct sunlight and avoid extremes of temperature.

Heat, flames and sparks.

Incompatible materials
Combustible material, reducing agents and metals.

Hazardous decomposition products
Toxic nitrogen oxides and aluminium oxides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 Oral - Rat - 3,263 mg/kg (OECD Test Guideline 401)

Ingestion: Ingestion may cause nausea, vomiting and absorption. Symptoms after absorption of toxic quantities may include dizziness, stomach irritation, abdominal cramps, diarrhea, weakness, CNS disorders, methaemoglobinaemia, convulsions and collapse.

Inhalation: May irritate the nose and throat. Symptoms may include sore throat, coughing and shortness of breath.

Skin corrosion/irritation
May be slightly irritating to skin. May cause redness and pain.

Serious eye damage/irritation
Causes serious eye damage.

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
Not classified based on available information.

Aspiration hazard
Not classified based on available information.

Additional information
Chronic Effects: Repeated ingestion of small amounts may cause weakness, depression, headache and mental impairment. Ingestion of large amounts may cause phosphate deficiency.

Introduction of aluminium compounds directly into the blood stream may contribute to the development of neurological effects resembling senility.

SECTION 12: Ecological information

Toxicity
The following applies to aluminium compounds in general: for acidic aluminium compounds: biological effects: toxic for water organisms. In the case of alkaline aluminium compounds, flocculation may cause mechanical damage in aquatic organisms.
The following applies to nitrates in general: may contribute to the eutrophication of water supplies. Hazard for drinking water.

Mobility in soil
Due to its solubility will be highly mobile in soils.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 1438
Class: 5.1
Packing Group: III
Proper Shipping Name: ALUMINIUM NITRATE

Hazchem emergency action code (EAC)
1Y

IMDG
UN Number: 1438
Class: 5.1
Packing Group: III
EMS Number:
Proper Shipping Name: ALUMINIUM NITRATE

IATA
UN Number: 1438
Class: 5.1
Packing Group: III
Proper Shipping Name: ALUMINIUM NITRATE

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer
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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)