

AMMONIUM NITRATE



SAFETY DATA SHEET – CHEMICAL SUBSTANCES

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Identifier:

Product Name: Ammonium Nitrate

Other Means of Identification:

Synonyms: Ammonium Nitrate Prills, Porous Prilled Ammonium Nitrate, PPAN, Security Sensitive Ammonium Nitrate, SSAN

Proper Shipping Name: AMMONIUM NITRATE

Recommended Use of the Chemical and Restrictions on Use:

Recommended Use: Explosives manufacture

Restrictions on Use: This material is classified as Security Sensitive Ammonium Nitrate (SSAN). Additional security controls apply as determined by state and territory governments.

Supplier's Details:

Supplier's Name: Nitro Sibir Australia

Address: Suite 3, Level 1, 1 Puccini Court
Stirling WESTERN AUSTRALIA 6021

Telephone: +61 8 9022 3821

Emergency Telephone Number:

Emergency Number: 1800 884 289 (all hours)

SDS Date: November 2021

2. HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture:

Classified as hazardous according to Safe Work Australia: HAZARDOUS CHEMICAL.

Classified as Dangerous Goods according to the criteria of the Australian Dangerous Goods Code: DANGEROUS GOODS.

GHS Label Elements, Including Precautionary Statements:

Oxidising Solids – Category 3

Serious Eye Damage / Irritation – Category 2A

Signal Word: Warning



Flame Over Circle



Exclamation Mark

Hazard Statement(s):

H272: May intensify fire; oxidiser

H319: Causes serious eye irritation

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Precautionary Statement(s):

Prevention:

P210: Keep away from heat/sparks/open flames/surfaces - No Smoking.

P220: Keep/store away from clothing/combustible materials.

P221: Take any precaution to avoid mixing with combustibles/incompatible materials.

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P305+P351+P338: IF IN EYES: Rinse carefully with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: IF eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet for extinguishing media.

Storage:

No storage statements.

Disposal:

P501: Dispose of contents in accordance with national/regional/local regulations.

POISONS SCHEDULE (SUSMP): None allocated.

Other Hazards Which do Not Result in Classification:

AUH031: Contact with acids liberates toxic gas.

AUH044: Risk of explosion if heated under confinement.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Proportion
Ammonium Nitrate	6484-52-2	100%

4. FIRST AID MEASURES

Description of Necessary First Aid Measures:

General Advice: For advice, contact a doctor or Poisons Information Centre (131 126).

Inhalation: Move the victim to fresh air while avoiding becoming a casualty. Loosen restrictive clothing and keep at rest until fully recovered. If breathing is difficult or the patient develops a bluish tinge of the lips and/or skin, ensure airway is clear of any obstruction and allow a qualified person to administer oxygen through a face mask. Apply artificial respiration if patient is not breathing and seek immediate medical advice.

Eye: In case of eye contact, remove any contact lenses and flush immediately with plenty of water, also under the eyelids, for at least 15 minutes. DO NOT apply any eye ointments or preparations. As with all eye contamination, it is a sensible precaution to seek medical advice.

Skin: If contact with skin or hair occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If irritation develops, seek medical attention. Nitrates can be absorbed through cut, burnt and broken skin. Launder contaminated clothing prior to re-use.

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Ingestion: Immediately rinse mouth with water. If swallowed DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical assistance. For further advice, call the Poisons Information Centre on 131126.

Most Important Symptoms/Effects, Acute and Delayed:

Symptoms and Effects: May cause serious eye irritation leading to redness and tearing of the eye. Nitrates can be absorbed through skin that is burnt, cut or broken. Inhalation of oxides of nitrogen may cause delayed onset of pulmonary oedema.

Indication of Immediate Medical Attention and Special Treatment, if Necessary:

Information to Doctor: Treat as for exposure to nitrates. Nitrites may affect the blood (methaemoglobinemia) and blood vessels which may result in vasodilation and a fall in blood pressure. Clinical findings: nitrates may have a smooth muscle relaxant effect – can cause headache, dizziness and marked hypotension. Effects peak within 30 minutes. Clinical signs of cyanosis appear before other symptoms because of the dark pigmentation of methaemoglobin. Institute cardiac monitoring, especially in affected persons with coronary, artery or pulmonary disease.

Inhalation of decomposition products, possibly including oxides of nitrogen, may cause effects such as difficulty breathing, chest discomfort and pulmonary oedema, which may have a delayed onset. Exposed persons should be kept under medical observation for 24 hours.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Suitable Extinguishing Media: Extinguish with coarse water spray in large quantities. Flood area with water from a distance.

Unsuitable Extinguishing Media: Dry agents such as carbon dioxide and dry chemical powder are unsuitable. Extinguishing methods based on smothering are NOT effective in the case of oxidising agents.

Specific Hazards Arising from the Chemical:

Hazards from Combustion Products: Irritating or toxic fumes may be produced under fire conditions. Yellow to brown fumes indicate the presence of toxic oxides of nitrogen.

Special Protective Actions for Fire Fighters:

Precautions and Special Protective Equipment: Oxidising substance. Nitrates will support the combustion of other materials. Evacuate ALL personnel to a safe location. Fires may be fought from a protected location. The substance may burn to explosion under certain conditions. Irritating and toxic vapours may be produced - breathing apparatus operating in positive pressure mode should be used. Full protective clothing should be worn. Prevent the molten product from entering drains and waterways.

HAZCHEM CODE: 1Y

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

For Non-Emergency Personnel: Prior to clean up of a spill, shut off all possible sources of ignition and ensure sufficient ventilation to any confined spaces. Clear the area of all unprotected personnel.

In the case of a transport accident notify the emergency services, Explosives Inspector and Nitro Sibir Australia.

For Emergency Personnel: Wear chemical resistant gloves, protective clothing, face mask and safety glasses to prevent skin and eye contact and inhalation of vapours.

Environmental Precautions:

Environmental Precautions: Contain the source and prevent the spread of the spill to ensure it does not contaminate drains and waterways. Do not flush into surface water or sanitary sewer systems. If contamination of drains or waterways occurs, advise the local emergency services.

Methods and Materials for Containment and Cleaning Up:

Methods for Containment: Prevent run off into drains and waterways. Clean up immediately.

Methods for Cleaning Up: Collect spilled material with a clean shovel, collect and seal material into properly labelled containers for disposal. Avoid generating dust. Do not return spilled material to original container. Ensure contaminated equipment and protective clothing is thoroughly washed. This material is classified as Security Sensitive Ammonium Nitrate (SSAN). Spillage recovery requires appropriate documentation and material to be accurately accounted for.

7. HANDLING AND STORAGE

Precautions for Safe Handling:

Advice for Safe Handling: Handle with great care. Ensure adequate ventilation. Avoid generation of dust. Avoid skin and eye contact. Avoid all contact with other chemicals. Do not subject the product to impact, friction between hard surfaces or any form of heating. Use personal protective equipment.

Keep away from sources of ignition – No smoking. Do not use in areas without adequate ventilation

General Hygiene Advice: Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and immediately after handling the product.

Conditions for Safe Storage Including any Incompatibilities:

Conditions for Safe Storage: Store in a cool, dry, well-ventilated place away from sources of heat, ignition and direct sunlight. Keep containers closed when not in use and securely seal and protect against physical damage.

Storage Incompatibilities: Do not store together with strong acids, strong alkalis, nitrates, chlorates, chlorites and permanganates.

Product Deterioration: Product deterioration is a process of gradual caking and hardening of the product. Product that has deteriorated is unsuitable for use.

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Storage Security: Ammonium nitrate is a security sensitive material and is subject to state and territory government controls issued by the relevant authority. All persons with unsupervised access to Security Sensitive Ammonium Nitrate (SSAN) require security clearances controlled and issued by local government authorities.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters:

Exposure Limits: No exposure value has been assigned to this material by Safe Work Australia, however for constituent(s) and decomposition product(s) according to Safe Work Australia Exposure Standards for Airborne Contaminants:

Dusts not otherwise classified: 8hr TWA - 10mg/m³

Nitrogen dioxide: 8hr TWA – 5.6mg/m³ (3ppm), 15min STEL – 9.4mg/m³ (5ppm)

STEL – Short term exposure limit (STEL) means the time-weighted average maximum airborne concentration of a substance calculated over a 15 minute period.

TWA – 8-hour time-weighted average (TWA) means the maximum average airborne concentration of a substance when calculated over an eight-hour working day, for a five day working week.

Appropriate Engineering Controls:

Engineering Controls: Use only in a well-ventilated area or an area equipped with appropriate exhaust ventilation to ensure air concentrations of components are controlled below workplace exposure standards. Ensure that eyewash stations and safety showers are close to the workstation.

Individual Protection Measures, such as Personal Protective Equipment (PPE):

Individual Protection Measures: A detailed and documented risk assessment must be carried out to determine minimum PPE requirements.

Select PPE in accordance with the work being undertaken to minimise the potential for injury and illness due to exposure from the substance. Consider location of the work, ventilation, form and temperature of the product, environmental factors and handling method.

Wear safety glasses at all times. Chemical resistant impervious gloves should be worn when there is direct contact with the product. Use with adequate ventilation. If an inhalation risk is present, wear half-face filter respirator suitable for organic vapours. Wash contaminated clothing and other PPE prior to storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties and Safety Characteristics:

Physical State: Solid, granules or prills

Colour: White

Odour: Negligible odour

Odour Threshold: No data available

Melting / Freezing Point: 160 °C

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Initial Boiling Point and Boiling Range:	No data available
Flammability:	Not applicable
Lower / Upper explosion limit / flammability limit	Not applicable
Flash Point:	Not applicable
Auto-ignition temperature:	No data available
Decomposition Temperature:	No data available
pH:	4.5 – 5.2 (10% solution @ 20°C)
Kinematic Viscosity:	No data available
Solubility:	Soluble in water
Partition Coefficient:	No data available
Vapour Pressure:	No data available
Relative Density:	0.70 – 0.80 g/cm ³ (bulk density)
Vapour Density:	No data available
Particle Characteristics:	Not applicable
Other Information:	No information available

10. STABILITY AND REACTIVITY

Reactivity:	Oxidising agent. Reactive with acids, alkalis and reducing agents. Contact with acids liberates toxic fumes. Avoid contact with combustible materials.
Chemical Stability:	Stable at normal ambient temperature and pressure. Stable under recommended storage conditions. Hygroscopic: absorbs moisture/water from surrounding air.
Possibility of Hazardous Reactions:	Oxidising material. Supports combustion of other materials and increases intensity of a fire. Contact with acids liberates toxic fumes. Mixing with chlorine or hypochlorites may result in the formation of explosive nitrogen trichloride.
Conditions to Avoid:	Store in isolation to prevent cross-contamination, and away from sources of heat and fire. Avoid contact with combustible material. Avoid formation of dust.
Incompatible Materials:	Incompatible with strong acids, strong alkalis, non-ferrous materials, combustible materials, nitrites, chlorates, chlorides, permanganates, organic substances and oxidising agents.
Hazardous Decomposition Products:	Oxides of nitrogen. When heated to decomposition (unconfined) ammonium nitrate produces nitrous oxide, white ammonium nitrate fumes and water. When mixed with strong acids will produce an irritating toxic brown gas, mostly of nitrogen dioxide. When molten, may decompose violently due to shock or pressure.

11. TOXICOLOGICAL INFORMATION

General Advice:

The product itself has not been tested for toxicological effects. When handled in accordance with the guidelines in this Safety Data Sheet, ammonium nitrate should not present any adverse health effects.

Acute Toxicity:

No data is available.

Information on Likely Routes of Exposure:

Skin Corrosion / Irritation: May cause irritation. Nitrates may be absorbed through cut, burnt or broken skin.

Serious Eye Damage / Irritation: Causes serious eye irritation. Contact with dust can lead to irritation, pain and redness.

Respiratory or Skin Sensitisation: Not known to produce respiratory or skin sensitisation.

Germ Cell Mutagenicity: Not a known mutagen.

Carcinogenicity: Not a known carcinogen.

Reproductive Toxicity: Not a known reproductive toxin.

Specific Target Organ Toxicity (STOT) - Single Exposure: No data is available.

Specific Target Organ Toxicity (STOT) - Repeated Exposure: No data is available.

Aspiration Hazard: Not a likely source of exposure.

Other Information on Acute Toxicity: No data is available.

Symptoms Related to the Physical, Chemical and Toxicological Characteristics:

Skin Contact: Can be absorbed through cut, broken or burnt skin with resultant adverse effects.

Inhalation: No data is available.

Delayed and Immediate Effects and Also Chronic Effects from Short and Long Term Exposure:

Skin Contact: Ammonium Nitrate can be absorbed through cut, burnt or broken skin and may cause dilation of blood vessels by direct smooth muscle relaxation and may cause methemoglobinemia.

Carcinogenicity: Not a known carcinogen.

Numerical Measures of Toxicity:

Ammonium Nitrate: Oral LD50 – 2217mg/kg (rat), Inhalation LC50 - >88.8mg/L (rat) 4h

LD50 (Lethal Dose) – the amount of a material, given all at once under control conditions, which causes the death of 50% (one half) of a large number of test animals.

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LC50 (Lethal Concentration) – concentration of a material in air that will kill 50% (one half) of test subjects (animals, typically mice or rats) when administered as a single exposure (typically 1 or 4 hours).

Interactive Effects:

No information available.

12. ECOLOGICAL INFORMATION

Exotoxicity:

Keep out of waterways. Ammonium nitrate is a plant nutrient. Large spills may kill vegetation. Considered to be of low toxicity to aquatic life.

Ammonium Nitrate: was evaluated at 5, 10, 25 and 50 mg (NH₄⁺)/L. The fertility of *Daphnia magna* was decreased at 50 mg/L. Post embryonic growth of crustacea was impaired at 10, 25 and 50 mg/L.

Persistence and Degradability:

Biodegradable.

Bioaccumulative Potential:

Ammonium nitrate has low potential for bioaccumulation.

Mobility in Soil:

Ammonium nitrate is water soluble and is expected to be mobile in soil.

Other Adverse Effects:

No data is available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods:

Dispose of this material in accordance with federal, state, territory and site regulations.

Ammonium nitrate may be disposed of as a fertiliser. Advice for specific situations can be obtained by contacting Nitro Sibir Australia and must be agreed with the appropriate authority. As this product is classified as Security Sensitive Ammonium Nitrate (SSAN), all material must be accurately accounted for and disposal of material must be appropriately documented.

14. TRANSPORT INFORMATION

Road and Rail:

This product is classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail.



UN Number:	UN1942
Proper Shipping Name:	AMMONIUM NITRATE
Hazard Class:	5.1 Oxidizing Agent
HAZCHEM Code:	1Y
Packing Group:	III

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Marine Transport:

This product is classified as Dangerous Goods by the criteria of the International Marine Dangerous Goods Code (IMDG Code) for transport by sea. This product is NOT a known marine pollutant according to the IMDG Code.



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Hazard Class:	5.1 Oxidizing Agent
Packing Group:	III
IMDG EMS Fire:	F-H
IMDG EMS Spill:	S-Q

Air Transport:

This product is classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.



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Packing Group:	III

Environmental Hazards:

This product is NOT a known marine pollutant according to the IMDG Code.

15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations Specific for the Product in Question:

Australia:

Classified as dangerous goods in accordance with the Australian Code for the Transport of Explosives by Road and Rail.

Classified as a hazardous chemical according to the criteria of Safe Work Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons. Not Scheduled.

All of the constituents of this material are listed on the Australian Inventory of chemical Substances (AICS).

International Agreements:

The Montreal Protocol on Substances that Deplete the Ozone Layer: Not applicable.

The Stockholm Convention on Persistent Organic Pollutants: Not applicable.

The Rotterdam Convention: Not applicable.

16. OTHER RELEVANT INFORMATION

Revision Date: November 2021

Reason(s) for Issue: Alignment with GHS Edition 7

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Abbreviations used:	CAS No	Chemical Abstract Service number (chemical unique identifier)
	g/cm ³	grams per cubic centimetre
	GHS	Globally Harmonised System of Classification and Labelling of Chemicals
	pH	Scale of acidity from 0 (acidic) to 14 (alkaline), pH 7 is neutral
	PPE	Personal Protective Equipment
	STEL	Short-term Exposure Limit
	STOT	Specific Target Organ Toxicity
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	TWA	Time Weighted Average

References:	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)
	Australian National Code of Practice for Chemicals of Security Concern
	Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – Seventh revised edition
	National Drugs & Poisons Scheduling Committee (NDPSC) - Standard for the Uniform Scheduling of Medicines and Poisons
	Safe Work Australia: Workplace Exposure Standards for Airborne Contaminants, December 2019
	Safe Work Australia: Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, July 2020

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