TAN
Safety Data Sheet

PLATINUM BLASTING SERVICES

Section 1 - Identification

Product Identifier	Porous Prill Ammonium Nitrate
Synonyms	Ammonium Saltpetre Nitric Acid, Ammonium Salt
Other means of identification	Technical Ammonium Nitrate (TAN)
Recommended use of the chemical and restrictions on use	General chemical, explosives manufacturer, fertiliser.
Details of manufacturer	Platinum Blasting Services Pty Ltd ABN 67 600 020 488 Level 12, 500 Queen St Brisbane QLD 4000
Emergency phone number	1800 885 411 / 24 hours

Section 2 – Hazard Identification

GHS and DG classification	Ammonium nitrate is classified as hazardous according to Australian WHS Regulations. Ammonium nitrate is classified for physicochemical hazards and specified as dangerous in the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code), 7th Edition Ammonium nitrate is classified for physicochemical hazards and specified as dangerous in the IMDG Code, 2014 Edition.	
Hazardous classification	Oxidising Solids: Category 3 Acute Toxicity: Oral: Category 5 Serious Eye Damage / Eye Irritation: Category 2A	
Label Elements		
Signal word	Warning	
Labelling		
Hazard statements	H272	May intensify fire; oxidiser.
	H303	May be harmful if swallowed.
	H319	Causes serious eye irritation.
	AUH044	Risk of explosion if heated under confinement.
	AUH031	Contact with acids liberates toxic gas.
Precautionary Statements	**Prevention**	
	P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.

	P220	Keep/store away from clothing/incompatible materials/combustible materials.
	P221	Take any precaution to avoid mixing with combustibles/incompatible materials.
	P264	Wash thoroughly after handling.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	Response	
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P312	Call a POISON CENTER or doctor/physician if you feel unwell.
	P337 + P313	If eye irritation persists: Get medical advice/attention.
	P370 + P378	In case of fire: Use appropriate media for extinction.
	Storage	
	None allocated.	
	Disposal statements	
	P501	Dispose of contents/container in accordance with relevant regulations.

Section 3 – Composition & Information on Ingredients

Ingredient	CAS	Content	Ingredient classification (as per GHS)
Ammonium nitrate	6484-52-2	> 99%	H272 H319
Moisture and additives		< 1%	

Section 4 – First Aid Measures

Ammonium nitrate is moderately toxic if large amounts are swallowed. If more than a small quantity has been swallowed seek medical attention. Training on handling ammonium nitrate incidents using this MSDS should be provided before any ammonium nitrate handling or use commences.

First aid procedures, equipment, medication and training for the treatment of injury by ammonium nitrate should be in place BEFORE the use commences.
Equipment in place should be:

- Safety shower and eyewash stations immediately accessible in the workplace;
- Eye-wash bottle;
- Fresh, clean cool drinking water;
- Oxygen;
- “Space” or thermal blankets for treating patients for shock;
- Personal protective equipment for use by first aid personnel.

If dealing with exposure to this product, refer to first aid procedures below.

Personal Protection by First Aid Personnel	First aid personnel providing first aid treatment to a patient injured by ammonium nitrate should observe the following precautions for their own personal protection: • Avoid contact with ammonium nitrate by wearing protective gloves; • Wear chemical goggles to prevent ammonium nitrate particles entering eyes; • Wear P2 type canister respirator if rescue area is contaminated by airborne ammonium nitrate dust.
Swallowed	If person is conscious, rinse mouth thoroughly with water immediately and give water or milk to drink. DO NOT induce vomiting. Seek medical assistance if more than a small quantity has been swallowed, when relevant symptoms occur after swallowing.

Eyes	Immediately irrigate with copious quantities of water, while holding eyelids open, for at least 15 minutes. Seek medical attention if irritation persists.
Skin	Wash affected areas with copious amounts of water. Remove all contaminated clothing and launder before re-use.
Inhalation	Remove affected person from exposure to a well-ventilated area. Keep warm and at rest. In emergency, if breathing is difficult give oxygen. If the affected person suffers cardiac arrest commence cardio-pulmonary resuscitation immediately. Seek urgent medical attention.
Advice to Doctor	This product contains nitrates, which may be reduced to nitrites by intestinal bacteria. Nitrites may affect the blood (methemoglobinemia) and blood vessels (vasodilation and a fall in blood pressure). 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 patients with coronary, artery or pulmonary disease.

No long term complications are known.

Further information about the treatment for exposure to this product can be obtained from the Poisons Information Centre on (08) 13 1126 (Australia only)

Section 5 – Fire Fighting Measures

Product Flammability	Ammonium nitrate is not flammable under normal applications and is not considered a fire risk but will support combustion in an existing fire by liberating oxygen – even if smothered. It is for this reason that fires involving ammonium nitrate cannot be extinguished by the prevention or air ingress (for example, smouldering with steam) because of the in-situ provision of oxygen from the ammonium nitrate itself. Thermal decomposition may result in toxic gases, such as oxides of nitrogen and ammonia, being produced.	
Suitable extinguishing media	Water spray in large quantities. WARNING: explosion risk. DO NOT USE the following as extinguishing media: Dry agent -carbon dioxide, dry chemical powder. Extinguishing methods based on smothering are ineffective in the case of oxidising agents.	
Hazard from combustion products	Decomposes on heating; emitting irritating white or orange & brown fumes of toxic oxides of nitrogen.	
Advice for firefighters	Fire Fighting	Wear full protective clothing, including respiratory protection. Inert chemical absorbent and substantial amounts of water will be required to clean up a large spill. Portable showers and eyewash may also be needed. Prevent run-off into drains and waterways. WARNING: Explosion risk in case of fire, especially if contaminated or confined. An adjacent detonation may also involve the risk of explosion. Molten product may explode from friction, shock, heat or containment. If safe to do so, prevent molten product being confined in drains, pipes, etc. Fire-fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to products of combustion / decomposition. WARNING: Explosion risk in case of fire. With an intense fire evacuate the area of all personnel to at least 1000 metres. If safe to do so, remove containers from path of fire. If safe to do so, prevent molten product being confined in drains, pipes, etc. If safe to do so, keep containers and adjacent areas cool with water sprays Prevent spillage or run-off from entering drains or water courses.
	HAZCHEM	1Z (Note: 1Y has been approved by the Competent Authority) IMDG EMS Fire: F-H; IMDG EMS Spill: S-Q

Section 6 – Accidental Release Measures

Emergency Procedures	Hazardous conditions may result if an ammonium nitrate spill is managed improperly. Make plans in advance to handle possible emergencies, including obtaining stocks of inert absorbent materials, to avoid both human and environmental exposure. Always wear recommended personal protective equipment and respiratory protection.
Methods and Materials for containment and clean up	For all spills, evacuate unprotected personnel upwind and out of danger. Remove sources of heat and ignition. Restrict access to spill site. Any spillage should be contained and recovered. Do not allow to mix with sawdust and other combustible organic substances.
Small leaks	If possible contain the area of the spill, sweep into a clean labelled open container and recycle.

Large spills	If possible contain the area of the spill. A front end loader may be required to scoop up spill into a clean container. Depending on the degree and nature of contamination, dispose of by use as fertilizer on farm or authorised waste facility. Wash down area and prevent run-off into drains, sewers or waterways. Soak up wet material using absorbent material such as vermiculite or sand and dispose at authorised waste facility.

Section 7 – Handling and Storage

Precautions for safe handling	Regulated dangerous goods as Oxidizing Agent Class 5·1. Avoid skin and eye contact and breathing in dust. Avoid handling which leads to dust formation. Keep material away from heat or ignition sources.
Conditions for safe Storage and handling, including any incompatibilities	Store in a cool, dry, well-ventilated place. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Store away from combustible materials. Ammonium Nitrate may react violently with certain chemicals including organic materials, reducing agents, metal powders, strong acids, nitrites, chlorates, chlorides and permanganates Keep containers closed when not in use - check regularly for spills. Do not allow pallets, ropes, covers or other equipment to become impregnated with ammonium nitrate. This material is a security sensitive product and needs to be securely stored and accurately accounted for. Where the nature of the bagged product and climatic conditions so require, store under conditions that will avoid breakdown by thermal cycling (wide variation in temperature). The product should not be stored in direct sunlight for extended periods to avoid physical breakdown due to thermal cycling.

Section 8 – Exposure Controls & Personal Protection

Exposure controls measures

No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for decomposition product(s):

	TWA		STEL (15min)	
	ppm	mg/m³	ppm	mg/m³
Nitrogen Dioxide	**3**	**5.6**	**5**	**9.4**

Appropriate engineering controls

Avoid high dust concentration and provide ventilation where necessary.

Individual protection measures, such as Personal Protective Equipment (PPE)

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

Eye and Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: Tightly-fitting goggles CEN: EN166.

Skin Protection: Wear PVC gloves when handling the product to prevent contact. Wear long trouser and long sleeves to prevent contact

AS/NZS 2210.1:2010 Safety, protective and occupational footwear - Guide to selection, care and use.

Section 9 – Physical and Chemical Properties

Appearance (colour, physical form, shape)	White odourless prills, with strong disagreeable acrid taste.	**pH (as supplied)**	pH of 10% solution: > 4·5
Odour	Odourless	**Soluability**	Solubility in water: 118·3 g/100g of water at 0 °C; slightly soluble in alcohol; not soluble in acetone.
Vapour pressure	Ammonium nitrate does not exert significant vapour pressure.	**Specific gravity or density**	Typical Bulk Density: 755 ± 25 kg/m3
Vapour density	Not applicable.	**Flash point and method of detecting flash point**	Ammonium nitrate does not give off flammable vapours.
Boiling point/range	Decomposes from 170°C before boiling.	**Freezing/melting point**	170 °C
Ignition temperature	Not applicable.	**Upper and lower flammable (explosive) limits in air**	Ammonium nitrate is not flammable.
Viscosity	Not applicable.		

Section 10 – Stability and Reactivity

Chemical Stability	When stored and handled in accordance with Australian Standard AS 4326 The storage and handling of oxidizing agents, ammonium nitrate remains stable.
Conditions to avoid	Store away from sources of heat or fire, especially in a confined space. Keep away from combustible materials and organic substances. Avoid storage and contamination with chlorine bleaches, pool chlorine and hypochlorites. Ensure that ammonium nitrate fertiliser is not stored near hay, straw, grain, diesel oil, greases. Do not permit smoking and the use of naked lights in the storage area for ammonium nitrate. Restrict stack size for bagged product (according to local regulations). Any building used for the storage of ammonium nitrate should be dry and well ventilated. Where the nature of the bagged product and climatic conditions so require, store under conditions that will avoid breakdown by thermal cycling (wide variation in temperature). The product should not be stored in direct sunlight to avoid physical breakdown due to thermal cycling. Avoid excessive generation of dust. Avoid contamination by combustible (e.g., diesel oil, grease, etc.) and incompatible materials. Avoid unnecessary exposure to the atmosphere to prevent moisture pick up.
Incompatible materials	Reactive or incompatible with the following materials: Combustible materials such as cloth, leaf litter and hydrocarbon liquid. Reducing materials such as permanganates. Strong acids such as Nitric Acid. Chlorine containing materials such as: Chlorates, chlorites & pool chlorine. Metals and metal powders: Copper, zinc, or their alloys (bronze, brass, galvanized metals, etc.), aluminium powder and mild steel.
Hazardous decomposition products	When heated to decomposition (unconfined) produces nitrous oxide, white ammonium nitrate fumes and water. Other hazardous decomposition products include irritating toxic brown fumes of nitrogen oxides (NOx). May evolve nitrogen oxides (nitrous oxide) and ammonium nitrate when heated to decomposition
Hazardous reactions	Contamination of ammonium nitrate with chlorine bleaches, pool chlorine and hypochlorites may result in the formation of explosive nitrogen trichloride. When mixed with strong acid ammonium nitrate produces toxic brown nitrogen dioxide gas. When molten, ammonium nitrate may decompose due to shock or pressure. Ammonium nitrate may react violently with nitrites, chlorates, chlorides and permanganates.

Section 11 – Toxicological Information

When handled in accordance with the guidelines in this material safety data sheet, ammonium nitrate should not present any health effects. If this product is mishandled, symptoms that may arise are:

Acute toxicity	Ammonium nitrate has moderate toxicity if swallowed. It is not classified as hazardous according to criteria of WorkSafe Australia.
Inhalation	High mist concentration of air-borne material may cause irritation to the nose and upper respiratory tract; symptoms may include coughing and sore throat. Prolonged exposure may be harmful.
Skin	Prolonged contact may cause some irritation, including redness and itching.
Eyes	May cause irritation, redness and pan following contact due to abrasive nature of material.
Swallowed	Presents moderate toxicity, unless large amounts are ingested. Large amounts give large to gastro-intestinal irritation, with symptoms such as nausea, vomiting and diarrhoea. Large amounts may also cause dilation of blood vessels by direct smooth muscle relaxation and methaemoglobinaemia (excessive conversion of haemoglobin to methaemoglobin, which is incapable of binding and carrying oxygen – methaemoglobin is formed when iron in the haem molecule is oxidised from the ferrous to the ferric state). Symptoms include dizziness, abdominal pain, vomiting, bloody diarrhoea, weakness, convulsions and collapse. LD50 (Oral, rat) = 2,217 mg/kg.
Chronic	Prolonged or repeated exposure may cause drying of the skin with cracking and irritation that may lead to dermatitis.

Section 12 – Ecological Information

Hydra Matrix Series have not been tested for aquatic toxicity or other ecotoxicological effects. However, if product enters water way, ammonium nitrate will start slowly leaching from the product after 30 days. Therefore, the ecological information of the product is based on the ecological information of ammonium nitrate.

Ecotoxicity	Ammonium nitrate is a plant nutrient and large contamination may kill vegetation and cause poisoning in livestock and poultry. Ammonium nitrate is of low toxicity to aquatic life and spills may cause algal blooms in static waters.
Persistence and degradability	When released into the soil, ammonium nitrate is not expected to evaporate significantly, but is expected to leach into groundwater. In damp soil the ammonium ion, NH +, is adsorbed by the soil. When released into water, ammonium nitrate is expected to readily biodegrade; the nitrate ion, NO -, is mobile in water. The nitrate ion is the predominant form of plant nutrition. It follows the natural nitrification/denitrification cycle to give nitrogen.
Mobility	Very soluble in water. The NO3 ion is mobile. The NH4 ion is adsorbed by the soil.
Environmental fate (exposure)	Low toxicity to aquatic life. TLm 96 between 10 – 100 ppm. No effects on growth or feeding activities were observed in largemouth bass and channel catfish exposed to concentration of 400 mg NO3-/L.
Acute Toxicity to Fish	48 hr LC50 (Cyprinus carpio): 1·15 - 1·72 mg un-ionised NH3/L; 95 – 102 mg total NH3/L; 96 hr LC50 (Chinook Salmon, rainbow trout, bluegill): 420 -1,360 mg NO -/L; 3 TLm (Tadpoles): 910 mg NH3/L.
Chronic Toxicity to Fish	7-day LC50 (Fingerling rainbow trout): 1,065 mg/L.
Acute Toxicity to Aquatic Invertebrates	EC50 (Daphnia magna): 555 mg/L; 124·9 mg total NH3/L.
Chronic Toxicity to Invertebrates	Up to 7 days NOEC (Bullia digitalis): 300 mg/L.
Bioaccumulative potential	Ammonium nitrate does not show any bio-accumulation phenomena.

Section 13 – Disposal Considerations

Refer to local State Land Waste Management Authority. Depending on degree and nature of contamination, dispose of by use as fertiliser on farm or to authorised waste facility. Empty containers (bulka bags) must be decontaminated by rinsing thoroughly with water. Rinsing water needs to be disposed of carefully. Avoid contaminating waterways.

There is no data available for special precautions for landfill or incineration.

Section 14 – Transport Information

Hydra Matrix Series is classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail. The transport information for these cases is provided below.

Road and Rail Transport	UN No:	1942
	Proper Shipping Name or technical name	Ammonium Nitrate
	Transport Hazard Class:	5.1
	Packing group	III
	Dangerous Goods Class Label	
	Hazchem or Emergency Action code	1Z (Note: 1Y has been approved by the Competent Authority) IMDG EMS Fire: F-H; IMDG EMS Spill: S-Q
Marine Transport	UN No:	1942
	Proper Shipping Name or technical name	Ammonium Nitrate
	Transport Hazard Class:	5.1
	Packing group	III
	Dangerous Goods Class Label	
	Hazchem or Emergency Action code	1Z (Note: 1Y has been approved by the Competent Authority) IMDG EMS Fire: F-H; IMDG EMS Spill: S-Q
Air Transport	TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.	

Special precautions include: Not to be loaded with explosives (Class 1), flammable gases (Class 3), toxic gases (class 2·3), Flammable liquids (Class 3), flammable solids (Class 4·1), spontaneous combustible substances (Class 4·2), dangerous when wet substances (Class 4·3), organic peroxides (Class 5·2), toxic substances, where the toxic substances are fire risk substances (Class 6), radioactive substances (Class 7), corrosives (Class 8), miscellaneous dangerous goods, where the miscellaneous dangerous goods are fire risk substances (Class 9), and fire risk substances other than dangerous goods; however, exemptions apply.

Section 15 – Regulatory Information

Hazard Classification	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Inventory Listing(s)	Australia: AICS (Australia Inventory of Chemical Substances) All components are listed on the AICS: or are exempt.
Poison schedule	Ammonium nitrate is not listed as a poison in the Standard for the Uniform Scheduling of Drugs and Poisons.
Additional national and/or international regulatory information	OSHA: Hazardous by definition of Hazard Communication Standard (40 CFR Part 370)

Section 16 – Other Information

The following sources were consulted in the preparation of this SDS:

Model Code of Practice: Preparation of safety data sheets for hazardous chemicals – SafeWork Australia

Classifying hazardous chemicals, National guide, SafeWork Australia 2020

Hazardous Chemical Information System (HCIS) - http://hcis.safeworkaustralia.gov.au/

Chemical assessment database at https://www.industrialchemicals.gov.au/chemical-information/search-assessments

Australian Code for the Transport of Dangerous Goods by Road & Rail

Model Work Health and Safety Regulations as at 1 January 2021 as released by Safe Work Australia

The chemical is also included in the list of 96 'Chemicals of Security Concern' identified by the Council of Australian Governments (COAG).

National Library of Medicine (NIB)

European Chemical Agency (ECHA)

Cameo chemicals

Abbreviations

ADG	Australian Dangerous Goods
ECHA	The European Chemical Agency
FORS	Federal Office of Road and Safety
MPU	Mobile processing unit
GHS	Globally Harmonised System
Kg	Kilogram
LC50	Lethal concentration 50, median lethal concentration
LD50	Lethal dose 50. The single dose of a substance that causes the death of 50% of an animal population from exposure to the substance by any route other than inhalation
NOEC -	No Observed Effect Concentration
NOHSC	National Occupational Health and Safety Commission
PPM	Parts per million
SSAN	Security sensitive ammonium nitrate
SSE	Security Sensitive Explosive
SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons
TWA	The time weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.
STEL	Short Term Exposure Limit. the airborne concentration of a particular substance calculated as a time-weighted average of 15 minutes, which should not be exceeded at any time during a normal eight-hour workday.

Disclaimer

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