MATERIAL SAFETY DATA SHEET

WALA PRILL

Section 1 – Identification of the Material and Supplier

Product

Wala Prill, Ammonium Nitrate

Other names	AN prill, AN, porous prill.
Recommended use	Production of explosives and chemical manufacture.
Company name	Sun Mining Services. 8 Monigold place Dinmore QLD
	+61432020025

Section 2 – Hazard Identification

Hazard Classification, including a statement of overall hazardous nature

HAZARDOUS SUBSTANCE.

Ammonium nitrate is not classified as hazardous and is not specified in the NOHSC List of Designated Hazardous Substances [NOHSC:10005(1999)].

DANGEROUS GOODS.

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), 6th Edition, (FORS, 1998).

Risk Phrases

Ammonium nitrate is classified as an oxidizing agent. R22 Harmful if swallowed R31 Contact with acid liberates toxic gas R36 Irritating to eyes

Safety Phrases

Ammonium nitrate is classified as dangerous goods.

S14/S15 Keep away from heat, sources of ignition – No smoking, combustible material

S21 When using do not smoke

S29 Do not empty into drains

S41 In case of fire and /or explosion do not breathe fumes

S50 Do not mix with minerals, acids, chlorine, oxidizing agents, alkalis, diesel, oils and greases.

S56 Dispose of this material and its container to hazardous or special waste collection point

S57 Use appropriate containment to avoid environmental contamination

S59 Refer to manufacturer for information on recovery/recycling

S60 Wala Prill material and its container must be disposed of as hazardous waste

Poison Schedule

Ammonium nitrate is not listed as a poison in the Standard for the Uniform Scheduling of Drugs and Poisons.

Section 3 – Composition/Information on Ingredients

Chemical ingredients	Proportion of ingredients	CAS Number for ingredients
Wala Prill Ammonium nitrate	99 % (wt/wt)	6484 -52-2
Moisture and additives	Remainder	

Section 4 – First Aid Measures

First Aid

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 Facilities

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

Equipment that should be in place:

Safety shower and eyewash stations immediately accessible in the workplace;

Eye-wash bottle;

Fresh, clean cool drinking water;

First aid Oxygen;

Personal protective equipment for use by first aid personnel.

FIRST AID PROCEDURES FOR DEALING WITH THIS PRODUCT AND EXPOSURE TO IT

1. 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.

2. 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.

3. Eyes

Immediately irrigate with copious amounts of water, while holding eyelid open, for at least 15 minutes. Seek medical attention if irritation persists.

4. Skin

Wash affected areas with copious amounts of water. Remove all contaminated clothing and launder before reuse.

5. 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 (methaemoglobinaemia) 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.

Long Term Complications

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 conditions and is not considered a fire risk, but will support combustion in an existing fire by liberating oxygen, even if smothered. For this reason fires involving ammonium nitrate cannot be extinguished by the prevention of air ingress. Thermal decomposition may result in toxic gasses, such as oxides of nitrogen and ammonia being produced.

Suitable extinguishing media

Extinguish fires involving ammonium nitrate with large amounts of water.

Hazard from combustion products

Fire will cause ammonium nitrate to decompose giving off fumes of nitrogen oxides and ammonia.

Special protective precautions and equipment for fire fighters

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.

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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 Spills

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 excessive generation of dust. Avoid contamination by combustible (e.g., diesel oil, grease, etc.) and incompatible materials, which may cause fires. Avoid unnecessary exposure to the atmosphere to prevent moisture pick up, which makes the material difficult to handle. When handling ammonium nitrate over long periods use appropriate personal protective equipment, e.g., gloves.

Conditions for safe storage, including any incompatibilities

Store in accordance with Australian Standard AS 4326; The storage and handling of oxidizing agents. Store away from sources of heat or fire, especially in a confined space – the heating may cause an explosion. Keep away from combustible materials and substances mentioned in Precautions for safe handling section above. Avoid storage and contamination with chlorine bleaches, pool chlorine and hypochlorites as a reaction, leading to the formation of explosive nitrogen trichloride, may occur. Dry ammonium nitrate has been reported to detonate in fires with dry ammonium sulfate. Ensure that ammonium nitrate fertiliser is not stored near hay, straw, grain, diesel oil, greases, etc., as these are incompatibles and may cause fires. 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 you have bagged product and climatic conditions so require, store under conditions that will avoid breakdown by thermal cycling (temperature cycling through 32 degrees Celsius). The product should not be stored in direct sunlight to avoid physical breakdown due to thermal cycling.

Section 8 – Exposure Controls/Personal Protection

National exposure standards

Biological limit values	No data available.
Engineering controls	Avoid high dust concentration and provide ventilation where necessary.
Personal protective equipment	Personal protective equipment (PPE) should be used where other control measures are not practicable or adequate to control exposure. It should be chosen to prevent routine exposure and to protect workers in the case of accidental contact with ammonium nitrate.

Eye/face protection:	Wear chemical safety glasses to prevent eye contact.
Skin protection:	Wear PVC gloves when handling the product to prevent contact. Wear long trouser and long sleeves to prevent contact. Respiratory protection: Use P2 type canister respirator where dust is a problem. Personal hygiene: Change and wash clothing and PPE, if contaminated, or before storing and/or re-using. Wash hands and face thoroughly after handling and before work breaks, eating, drinking, smoking and using toilet facilities.

Section 9 – Physical and Chemical Properties

Appearance	White odourless prills, with strong disagreeable acrid taste.
Odour	Odourless
pH	pH of 10% solution: 4.0 to 5.0
Vapour pressure	Ammonium nitrate does not exert significant vapour pressure.
Vapour density	Not applicable.
Boiling point	Decomposes from 170 °C before boiling.
Melting point	Around 170 °C.
Solubility	Solubility in water: 118•3 g/100g of water at 0 °C; slightly soluble in alcohol; not soluble in acetone.
Specific gravity or density	Bulk density: 780 ± 45 kg/m3.
Flash point	Ammonium nitrate does not give off flammable vapours.
Flammable limits in air	Ammonium nitrate is not flammable.
Ignition temperature	Not applicable.
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. Dry ammonium nitrate has been reported to detonate in fires with dry

ammonium sulfate. 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 there is bagged product and climatic conditions so require, store under conditions that will avoid breakdown by thermal cycling (temperature cycling through 32 Degrees Celsius). 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

Ammonium nitrate is incompatible with copper, zinc, or their alloys (i.e., bronze, brass, galvanised metals, etc.), aluminium powder and mild steel.

Hazardous decomposition products	When heated to decomposition (unconfined) ammonium nitrate produces nitrous oxides, white ammonium nitrate fumes and water. Hazardous reactions Contamination of ammonium nitrate with chlorine bleaches, pool chlorine and hypochlorites may result in the formation of explosive nitrogen trichloride. Dry ammonium nitrate has been reported to detonate in fires with dry ammonium sulfate. 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

HEALTH EFFECTS 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: 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. Eye: 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

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, NH4 +, is adsorbed by the soil. When released into water, ammonium nitrate is expected to readily biodegrade; the nitrate ion, NO3 -, 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 NO3-/L;

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

Disposal methods and containers

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.

Special precautions for landfill or incineration No data available.

Section 14 – Transport Information

UN Number	1942
UN Proper shipping name	Ammonium Nitrate
Class and subsidiary risk	5•1 Oxidizing Agent
Packing group	III

Special precautions for user

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.

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Section 15 – Regulatory Information

Australian regulatory information

Ammonium nitrate is not classified as hazardous and is not specified in the NOHSC List of Designated

Hazardous Substances [NOHSC:10005(1999)].

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).

This material safety data sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this material safety data sheet and consider the information in the context of how the product will be handled and used in the workplace, including in conjunction with other products.