

# MATERIAL SAFETY DATA SHEET

Date: 01/04/2018

**PRIME**  
explosives  
DRILL & BLAST SERVICES



## Ammonium Nitrate

### Identification

<b>Product Name:</b>	Ammonium Nitrate
<b>Proper Shipping Name:</b>	Ammonium Nitrate
<b>UN Number:</b>	1942
<b>Other Names:</b>	Oxidising Agent
<b>DG Class:</b>	5.1
<b>Packaging Group:</b>	III
<b>Hazchem Code:</b>	E
<b>Product Use:</b>	Bulk Blasting Agent, Typically consisting of 10 to 40% emulsion
<b>Appearance</b>	White prills hydroscopic, odourless
<b>Melting Point</b>	155°C
<b>Boiling Point</b>	Decposes @ 210°C
<b>Vapour Pressure</b>	Not applicable
<b>Specific Gravity</b>	0.70 – 0.85g/cc
<b>Flash Point</b>	Not applicable
<b>Flammable limit LEL</b>	Not applicable
<b>Flammable limit UEL</b>	Not applicable
<b>Solubility in Water</b>	366g/100g @35°C
<b>Other Properties</b>	
<b>pH Value</b>	<b>5.4 (0.1M aq Soln)</b>
<b>Solubility in Organic Solvent Form</b>	<b>Soluble in ethanol</b> <b>Solid</b>
<b>Other Information</b>	<b>Reactivity</b>
<b>Health Effects</b>	
<b>Acute – Ingestion</b>	Swallowing can result in nausea, vomiting, headaches, gastric irritation, dizziness and hypertension.
<b>Acute - Eye</b>	An eye irritant
<b>Acute – Skin</b>	Contact with the skin may result in mild irritation.
<b>Acute – Inhalation</b>	Inhalation of dust may result in respiratory irritation.
<b>Chronic</b>	No information available for product.
<b>Other Information</b>	No adverse health effects expected if the product is handled in accordance with the safety data sheet and the product label.

### First Aid

<b>Ingestion:</b>	Rinse mouth with water. Give water to drink. DO NOT induce vomiting. Seek immediate medical assistance.
<b>Eye:</b>	Irrigate with copious quantities of water for 15minutes. In all cases of eye contamination it is a sensible precaution to seek medical advice.
<b>Skin:</b>	Wash contaminated skin with plenty of water. Remove contaminated clothing and wash before reuse. If irritation occurs seek medical advice.
<b>Inhalation:</b>	Remove victim from exposure – avoid becoming a casualty. Seek medical advice if effects persist.

Page 1 of 4

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## Ammonium Nitrate

### Advice To Doctor

Clinical Findings: The smooth muscle relaxant effect of ammonium nitrate may lead to headaches, dizziness and marked hypotension.

Cyanosis is clinically detectable when approximately 15% of the hemaeglobin has been converted to methaemoglobin (ie. Ferric iron). Symptoms such as headache, dizziness, weakness and 40% at levels of about 60% stupor, convulsions, coma, and respiratory paralysis occur and the blood is a chocolate brown colour. At higher levels death may result.

Spectrophotometric analysis can determine the presence and concentration of methaemoglobin in blood.

### Precautions For Use

**Other exposure info** No value assigned for this specific material by the national occupational health and safety commission (work safe Australia).

**Engineering controls** Avoid generating and inhaling dusts. Use in a well-ventilated area. Keep containers closed when not in use.

### Personal Protection

<b>Respirator type (AS 1716)</b>	If the dust exists, wear respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
<b>Eye protection</b>	Wear safety glasses.
<b>Glove type</b>	Wear impervious gloves.
<b>Clothing</b>	Wear overalls.
<b>Protective equipment</b>	Wear overalls, safety glasses and impervious gloves.
<b>Work/hygienic</b>	Always wash hands before smoking, eating drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or reusing.
<b>Other information</b>	Avoid eye contact and repeated or prolonged skin contact. Avoid generating and inhaling dusts.

### Flammability

#### Fire hazards

Not combustible but is strong oxidizing agent. Supports combination. Increase intensity of a fire.



## Ammonium Nitrate

### Safe Handling Information

#### Storage And Transport

**Storage Precautions:** Store in a cool, well-ventilated area, away from sources of heat or ignition. Store away from combustible materials, reducing agents metal powders, herbicides and fungicides. If using wooden pallets, these must be hardwood and periodically washed down with nitrate. Keep containers closed to prevent absorption of moisture from the atmosphere. Check regularly for spills.

**Transport:** Classified as a 5.1 (oxidizing agent ) Dangerous substances for the purpose of transport. Refer to relevant regulations for storage and transport requirements.

Not to be loaded with explosives (class 1), flammable gases (class 2.1), poisonous gases (class 2.3), flammable liquids (class 3) flammable solids (class 4.1) spontaneously combustible substances (class 4.2), dangerous when wet substances (class 4.3) organic peroxides (class 5.2), poisonous substances (where the poisonous are the fire risk substances) (class 6) radioactive substances (class 7), corrosives (class 8) miscellaneous dangerous goods (class 9) (where the miscellaneous dangerous goods are fire risks substances ), fire risks substances other than dangerous goods, however exemptions may apply.

<b>Proper shipping name</b>	Ammonium Nitrate
<b>Package group</b>	III
<b>EPG Number</b>	5.1.002
<b>IERG Number</b>	31

### Spills and Disposal

**Spills and leaks:** Shut off all possible ignition sources. Clear area of all unprotected personnel. Wear protective equipment to prevent eye and skin contamination and inhalation of dust. Cover with damp absorbent inert materials, sand or soil. Sweep up but avoid generating dust. Collect and seal in properly labeled drums or containers for disposal or reuse. Wash down area with excess water. Do not contaminate streams, rivers or water courses. The Australian code for the transport of dangerous goods by road and rail identifies this material as a pollutant to the environmental. In the event of a spillage, notify the local environmental protection authority or emergency services.

**Disposals:** Refer to state land waste management authority.

### Fire/Explosion Hazards

Strong oxidizing agent. On its own is not combustible, however will support combustion. Decomposes on heating emitting irritating white fumes of nitrous oxide and ammonium nitrate mist. Brown fumes indicate the presence of toxic oxides of nitrogen.

On detection of the fire compartments should be opened up to provide maximum ventilation. Fire fighters to wear self – contained breathing apparatus if risk of exposure to products to combustion/ decomposition. Fires should be fought from a protected location.

Keep containers and adjacent areas cool with water spray. If safe to do so, remove containers from path of fire. A



## Ammonium Nitrate

major fire may involve the risk of explosion in the event of contamination or strong confinement. An adjacent detonation may also involve the risk of explosion.

<b>Hazardous</b>	Emits irritating white fumes of nitrous oxide and ammonium nitrate mist
<b>Decomposition or by-products</b>	brown fumes indicate the presence of toxic oxides of nitrogen.
<b>Extinguishing media</b>	water spray (large quantities)
<b>Hazchem code</b>	1 [Y]

### Other Information

#### Information on Ecological effects

Ammonium Nitrate was evaluated at 5, 10, 25 and 50mg (NH<sub>4</sub>)/L. The fertility of daphnia magna was decreased at 50 mg/L. Post embryonic growth of crustacean was impaired at 10, 25 and 50 mg/L

#### Ecological Information

Eco- toxicity: 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.

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<sub>4</sub><sup>+</sup>, is adsorbed by the soil. When released into water, ammonium nitrate is expected to readily bio grade; the nitrate ion, NO<sub>3</sub><sup>-</sup> is mobile in water. The nitrate ion is the predominant form of plant nutrition. It follows the natural nitrification / DE- nitrification cycle to give nitrogen.

Mobility: Very soluble in water. The NO<sub>3</sub><sup>-</sup> ion is mobile. The NH<sub>4</sub><sup>+</sup> ion is absorbed by the soil.

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### Disclaimer

The information and suggestions above concern explosive products which should only be dealt with by persons having appropriate technical skills, and training and licences. The results depend to a large degree on the conditions under which the products are stored, transported and used.

While Prime Explosives make every effort to ensure the details contained in the data sheet are as current and accurate as possible the conditions under which its products are used are not within Prime explosives Limited control. Each user is responsible for being aware of the details in the data sheet and the product applications in the specific context of the intended use.

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