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## Safety Data Sheet: ANFO

According to Regulation (EC) No 1907/2006 (REACH)

Trade name: ANFO

Product No: ANFO

Version: 2.4 / EN

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### Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier: ANFO

#### Details of the supplier of the safety data sheet:

Platinum Blasting Services Pty Ltd

ABN 67 600 020 488

Level 12, 500 Queen St

Brisbane QLD 4000

EMERGENCY TELEPHONE NUMBER: 1800 885 411

### Section 2. Hazards identification

Classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail:  
DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia: HAZARDOUS SUBSTANCE

Classification of the substance or mixture:

Explosive – Division 1.1

Eye Irritation – Category 2A

Carcinogenicity – Category 2

Acute Aquatic Toxicity – Category 3

Chronic Aquatic Toxicity – Category 3

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

#### Hazard pictograms



H201



H319



H351

**Signal word**

DANGER

**Hazard statements**

H201 Explosive; mass explosion hazard.  
H319 Causes serious eye irritation.  
H351 Suspected of causing cancer.

**Precautionary statements****Prevention**

P103 Read Label before use.  
P201 Obtain special instructions prior to use  
P202 Do not use until all safety precautions have been read and understood  
P281 Use personal protective equipment as required  
P210 Keep away from heat / sparks/ open flames / hot surfaces: - No Smoking  
P250 Do not subject to grinding / shock/ friction  
P280 Wear protective gloves / eye protection / face protection / protective clothes  
P264 Wash hands thoroughly after handling

**Response**

P370 + P380 In case of fire: Evacuate area.  
P372 Explosion risk in case of fire.  
P373 DO NOT fight fire when fire reaches explosives.  
P305 + P351 + P338 If IN EYES: Rinse cautiously 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.  
P308 + P313 If exposed or concerned: Get medical advice/attention

**Storage**

P401 Store in accordance with AS2187.1  
P405 Store locked up.

**Disposal**

P501 Dispose of contents/container in accordance with local/regional/international regulations.

**Section 3. Composition/information on ingredients****Substances**

Substance name	CAS No.	Concentration	Classification according Regulation (EC) No. 1272 [CLP]
Ammonium Nitrate	6484-52-2	>92%	H272: May intensify fire; oxidizer H319: Causes serious eye irritation
Fuel, Diesel	68334-30-5	0 - <10%	H227: Combustible liquid H304: May be fatal if swallowed and enters airways H351: Suspected of causing cancer H411: Toxic to aquatic life with long-lasting effects

Non hazardous component (s)		<0.5%	
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## Section 4. First aid measures

### Description of first aid measures

#### General information

Contact a Poisons Information Centre Ph 131 126 (Australia) or doctor

#### Following inhalation

In case of inhalation, remove affected person to a safe place without other becoming exposed. Contaminated clothing should be removed, and remaining clothes loosened. Assist patient if necessary to a comfortable position and keep at rest until fully recovered. Ensure affected person is kept warm and comfortable.

Should the affected person experience breathing difficulties / develop bluish discolouration of the skin (which indicates Cyanosis- lack of oxygen in the blood), ensure airways are clear of any obstruction and have medical personal (or other qualified persons) administer oxygen via face mask.

In the event that breathing is not present or ceases administer artificial respiration and seek urgent medical assistance.

#### Following skin contact

In the event of contact with skin, remove contaminated clothes and wash skin thoroughly with running water. If irritation occurs seek medical assistance, nitrates can be absorbed through broken skin. Contaminated clothes should be laundered before reuse. Skin burns should be covered with clean dry dressing until medical assistance is obtained.

#### Following eye contact

In the event of the product coming in contact with eyes, flush eye with a continuous flow of water whilst holding the eyelids apart. Continue flushing for a minimum of 15 minutes or until advised to do otherwise by a Poisons Information Centre or doctor.

#### Following ingestion

Rinse mouth with water. If swallowed, do NOT induce vomiting, drink water, and seek medical advice

Indication of any immediate medical attention and special treatment needed

Notes for the doctor:

- Treat for exposure to Nitrates, may cause methemoglobinemia
- Cyanosis is detectable (clinically) when approx. 15% of haemoglobin has been converted to methaemoglobin.

Special treatment:

- Treat with 100% oxygen - via face mask
- Treat eye, skin contact and ingestion – treat as above
- Monitor blood pressure
- Treat hypotension if required
- Methaemoglobin level above 40%, give methylene blue – 1-2mg/kg body mass in a 1% solution by slow intravenous injection. If cyanosis persists after one hour – provide a second dose of 2mg/kg body mass. Total dose should not exceed 7mg/kg body mass as side effects including: chest pain, vomiting, diarrhoea, mental confusions, dyspnoea and cyanosis may result.
- Level in excess of 40% methaemoglobin require bed rest
- Monitor and provide oxygen for minimum of two hours following treatment with methylene blue

- If condition is unstable transfer to facility able to perform haemoperfusion – remove nitrates from the blood.
- Following inhalation of oxides of nitrogen (NOx) – affected persons should be monitored in hospital for 24 hours in case of delayed onset of pulmonary oedema.
- Follow up should be performed 2-3 weeks following exposure in case of inflammation/ changes of bronchiolitis fibrosa obliterans.

## Section 5: Firefighting measures

### Extinguishing media

DO NOT fight fires that contain explosives

### Special hazards arising from the substance or mixture

Explosive material. Avoid all ignition/ heat sources. Brown fumes indicate the presence of oxides of nitrogen (toxic) common if burning in semiconfined or confined environment.

Hazchem Code: E

### Advice for fire-fighters

Explosive material.

#### Small Fire

- Fire fighters to wear self-contained breathing apparatus if there is a risk of inhalation of vapours.
- If explosive is not actually burning, cautiously remove as much product as possible from the heat source to a safe distance.
- If explosive is burning – EVACUATE area immediately – DO NOT fight fire

#### Major Fire

- May present the risk of explosion.
- Any detonation in close proximity may also result in explosion.
- Severe explosive hazard when subjected to shock or exposed to heat
- Confined burning may result in detonation.

## Section 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Isolate any source of ignition, avoid friction or impact. Protective equipment should be worn to prevent contact with skin and / or eyes and breathing equipment to prevent inhalation of dust /vapours etc, any personnel not required or without protective equipment should be removed from the area.

### Environmental precautions

In case of contamination of water course, waterway etc advise local authorities without delay.

### Methods and material for containment and cleaning up

Clean up / containment should occur without delay, prevent contamination from reaching waterways. Collect using non-metallic implements, label all containers and arrange for disposal.

### Transport Accident

In the event of transport accident notify: Police, Explosive Inspector and Platinum Blasting Services (Ph 1800 855 411 24hrs 7 days)

## Section 7: Handling and storage

### Precautions for safe handling

Product should be handled with care.

Avoid contact with skin and eyes.

Avoid breathing dust/vapours

Avoid contact with other chemicals

Keep out of reach from children

Do not subject product to impact, friction, or heat

Do not store with combustible materials.

### Conditions for safe storage, including any incompatibilities

- Product should be loaded upon manufacture.
- If storage is required store in
  - a magazine suitably licenses for Class 1.1D Explosives.
  - cool, well ventilated, dry area out of direct sun light
  - closed container/vessel – inspect for leaks /pillage regularly
- Do not store with detonators
- Do not store near a source of heat or ignition
- Store away from strong acids and alkalis, nitrites, chlorates, chlorides and permanganates.

### Incompatibilities

Do not store with:

- Tetranitromethane
- Dichloroisocyanuric acid
- Trichloroisocyanuric acid
- Any
  - Chlorate
  - Bromate
  - Chlorite
  - Hypochlorite
  - Chloroisocyanurate
- Any Inorganic Nitrite

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## Section 8: Exposure controls/personal protection

Preventive industrial medical examinations are to be carried out.

### Control Parameters

No value assigned to this specific product by Safe Work Australia.

Workplace Exposure Standard(s) for constituent(s) and decomposition products(s) are as follows:

- Oil mist, refined mineral: 8Hr TWA = 5 mg/m<sup>3</sup>
- Nitrogen Dioxide: 8Hr TWA = 5.6mg/m<sup>3</sup> (3ppm), 15 min STEL = 9.4mg/m<sup>3</sup> (5ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminates.

**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 work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Appropriate engineering controls**

Ensure adequate ventilation is maintained whilst using this product, and that air concentrations of components are kept below Workplace Exposure Standards.

Always wash hands before, eating, drinking or smoking.

Launder contaminated clothing before re-use.

**Personal protective equipment**

**Eye / Face protection:**

Safety glasses with side shields, goggles or face shield.

**Skin protection:**

Hand protection: Impervious gloves

Body protection: Overalls / Long sleeve shirt and long pants

Other skin protection measures: Safety boots

**Respiratory protection:**

Respirator if required (Risk assessment based)

**Physical and chemical properties**

Information on basic physical and chemical properties

**Section 9: Appearance**

Physical State (appearance)	Prill – Granular solid
Colour	Off-white – Pink when doped
Specific Gravity	0.7-0.9
Odour	Kerosene
Odour Threshold	Not Available
Solubility	Partially soluble in water
pH	Not Available
Melting point/freezing point	Not Available
Initial boiling point/boiling range	Not Available
Flash point	>60°C
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Upper/lower flammability or explosive limits	Not Available
Vapour pressure	Not Available
Vapour density	Not Available
Partition coefficient:	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available
Viscosity	Not Available

Viscosity, dynamic	Not Available
Viscosity, cinematic	Not Available

## Section 10: Stability and reactivity

**Reactivity:** Explosive, stable under recommended storage and handling conditions.

**Chemical stability:** Explosive product. Avoid sources of ignition, static electricity discharge and friction. Heavy impact or excessive heating may result in detonations, particularly in confined environment.

**Possibility of hazardous reactions:** Explosive product. Risk of explosive in the event of major fire, detonation in close proximity may also involve the risk of explosion. Risk of explosion also possible from, heat, friction, shock, fire or other sources of ignition. Excessive heating or heavy shock impact may result in detonation, particularly when confined. In event of detonation or explosion potential for shrapnel exists.

**Conditions to avoid:** Exposure to heat, friction, flame, static electricity, shock impact or any ignition source. Do not store with combustible materials.

### Incompatible materials:

- Tetranitromethane
- Dichloroisocyanuric acid
- Trichloroisocyanuric acid
- Any
  - Chlorate
  - Bromate
  - Chlorite
  - Hypochlorite
  - Chloroisocyanurate
- Any Inorganic Nitrite

### Hazardous decomposition products:

- Oxides of nitrogen
- Oxides of carbon

Unconfined heating to decomposition will result in the production of white ammonium nitrate fumes and water.

## Section 11: Toxicological information

### Acute toxicity

No data available for this product.

Ammonium nitrate (constituent) Oral LD50: 2217mg/kg

### Skin corrosion/irritation

May be irritating to the skin on contact, dermatitis may result from prolonged / repeated exposure. Can be absorbed through broken skin (cut, abrasion or burn) with adverse effects; see sensitisation to the respiratory tract

### Sensitisation to the respiratory tract

Irradiating to mucous membranes and upper respiratory tract. In halation of vapours may result in: dizziness, headache, drowsiness and possible nausea. Nitrogen dioxide may result from blasting (brown gas), inhalation of nitrogen dioxide can result in: breathing difficulties, tightness of the chest and possible pulmonary oedema (onset may be delayed)

Absorption of ammonium nitrate (inhalation, ingestion, or absorption through broken skin) may cause dilation of blood vessels by direct smooth muscle relaxation and may also cause methaemoglobinaemia.

#### Eye damage/irritation

Irritant to eyes

#### Chronic effects

No information is currently available on this product.

Evidence from animal studies indicate repeated long term exposure to a component of this material may result in effects to the skin.

Contained within the diesel oil component of this material are polycyclic aromatic hydrocarbons (PAH). Some PAHs have been implicated as potential skin carcinogens in humans under conditions of poor personal hygiene, prolonged and repeated contact and sunlight exposure.

Diesel fuel has been classified by the International Agency of Research on Cancer as a Group 3 agent – not classifiable as to its carcinogenicity to humans.

Methaemoglobinaemia in humans and animals has occurred under untreated circumstances following overexposure to nitrates. Absorption of ammonium nitrate (inhalation, ingestion, or absorption through broken skin) may cause dilation of blood vessels by direct smooth muscle relaxation and may also cause methaemoglobinaemia.

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### Section 12: Ecological information

#### Toxicity

Aquatic toxicity

Avoid contaminating waterways

Harmful to aquatic organisms. May cause long term adverse effects in aquatic environments.

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### Section 13: Disposal considerations

#### Waste treatment methods

Disposal of contents and any containers in accordance with local/regional/national/international regulations.

Small quantities of damaged or deteriorated explosives can be destroyed by the inclusion into the blast holes which have been loaded.

Large quantities – notify Platinum Blasting Services for advice / assistance.

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### Section 14: Transport information

#### Road and Rail Transport

**Classification:** DANGEROUS GOODS – by criteria of the Australian Code for the Transport of Explosives by Road and Rail



UN No	0082
Transport Hazard Class	1.1D EXPLOSIVE
Proper Shipping Name (Technical Name)	EXPLOSIVE, BLASTING, TYPE B
Hazchem or Emergency Action Code	E



## Sea transport (IMDG)

**Classification:** DANGEROUS GOODS – by criteria of the International Maritime Dangerous Goods Code (IMDG Code)



UN No	0082
Transport Hazard Class	1.1D EXPLOSIVE
Proper Shipping Name (Technical Name)	EXPLOSIVE, BLASTING, TYPE B
IMDG EMS Fire	F-B
IMDG EMS Spill	S-Y

## Air transport (ICAO-TI / IATA-DGR)

Prohibited

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## Section 15: Regulatory information

This material is hazardous according to Safe Work Australia: HAZARDOUS SUBSTANCE

### Classification of the substance or mixture:

Explosive – Division 1.1

Eye Irritation – Category 2A

Carcinogenicity – Category 2

Acute Aquatic Toxicity – Category 3

Chronic Aquatic Toxicity – Category 3

### Hazard statements:

H201	Explosive; mass explosion hazard.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H412	Harmful to aquatic life with long lasting effects.

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## Section 16: Other information

To the best of our knowledge the information contained within this document is accurate at the time of publishing. Platinum Blasting Services assumes no liability whatsoever for the accuracy or completeness of information contained herein. Since Platinum Blasting Services cannot anticipate or control the conditions under which the product may be used, each user must, prior to use assess and control the risks associated with the application of the product.

For any clarification or further information please contact Platinum Blasting Services. This product is supplied under Platinum Blasting Services standard terms and conditions unless otherwise agreed prior.