ANFO

SAFETY DATA SHEET – PACKAGED EXPLOSIVES

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name:	NITRO SIBIR AUSTRALIA
Address:	Unit 218, 396 Scarborough Beach Road Osborne Park, WESTERN AUSTRALIA 6017
Telephone:	+61 417772219
Fax:	Not applicable
Emergency:	1800 884 289
Synonyms:	Ammonium Nitrate / Fuel Oil
Use:	Mining, quarrying and general blasting explosive
SDS Date:	Version 1, March 2015

2. Hazards Identification

HAZARD CLASSIFICATION:	**CLASSIFIED AS DANGEROUS GOODS ACCORDING TO THE CRITERIA OF THE AUSTRALIAN CODE FOR THE TRANSPORT OF EXPLOSIVES BY ROAD AND RAIL: DANGEROUS GOODS.** **CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA; HAZARDOUS SUBSTANCE.**
RISK PHRASE(S):	**R2:** Risk of explosion by shock, friction, fire or other sources of ignition. **R40(3):** Possible risk of irreversible effects.
SAFETY PHRASE(S):	**S34:** Avoid shock and friction. **S35:** This material and its container must be disposed of in a safe way. **S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection. **S53:** Avoid exposure - obtain special instructions before use.
POISONS SCHEDULE (SUSMP):	None allocated.

3. Composition / Information on Ingredients

Ingredient	CAS	Proportion	Risk Phrases
Ammonium Nitrate	6484-52-2	>90%	
Fuel, Diesel No. 2	68476-34-6	<10%	R40 Carc. Cat 3

4. First Aid Measures

Eye:	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue to flush until advised to stop by a Poisons Information Centre (phone 131126) or a doctor, or for at least 15 minutes. In all cases of eye contamination, it is sensible to seek medical advice and/or attention.

Inhalation:	Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.
Ingestion:	Rinse mouth with water. If swallowed, DO NOT induce vomiting. Give a glass of water. Seek medical advice.
Skin:	If contact with skin occurs, immediately remove any contaminated clothing and wash area thoroughly with soap and running water. Seek immediate medical assistance if redness persists. Nitrates can be absorbed through cut, burnt or broken skin. Launder contaminated clothing before reuse.
Advice to Doctor:	Treat symptomatically. Explosive material. Shrapnel from detonation may cause burns, wounds and bruises. Treat as for exposure to nitrates. May cause methemoglobinemia.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	DO NOT fight fires involving explosives.
Specific Hazards:	Explosive material. Avoid all ignition sources. On burning under confined or semi-confined conditions, some oxides of nitrogen and/or carbon will be present. Brown fumes indicate the presence of toxic oxides of nitrogen.
Precautions for Fire Fighters and Special Protective Equipment:	Explosive material. Avoid all ignition sources. In case of small fire where the actual explosive is not involved, carefully remove explosive to a safe distance, otherwise evacuate area immediately and allow to burn. DO NOT fight fire.
Other Information:	A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion. Mass explosion hazard.
HAZCHEM CODE:	E

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	Shut off all possible ignition sources and isolate the area. Clear area of all unprotected personnel. Avoid friction and impact. Wear protective equipment to prevent skin and eye contact. In case of fire, evacuate all personnel to a safe distance and allow to burn or fight fire remotely. Only personnel trained in emergency response should respond.
Environmental Precautions:	If contamination of drains or waterways occurs, advise local emergency services or local environmental protection services.
Materials for Containment and Cleaning Up:	Handle with care. Wear protective equipment to prevent skin and eye contact. Prevent runoff into drains and waterways. If no fire is danger is present and product is otherwise undamaged and/or uncontaminated, collect with non-metallic implements and repackage product in original packaging or other clean approved container. Ensure that a complete account of product is made and verified.

7. HANDLING AND STORAGE

Handling: Handle with care. Only properly qualified and authorised personnel should handle and use explosives. Unintended detonation of explosives can cause serious injury or death. Use in designated areas with adequate ventilation. DO NOT subject the material to impact, friction between hard surfaces, or to any form of heating. Avoid all contact with other chemicals. Keep containers closed when not in use. Wear appropriate personal protective equipment to prevent inhalation, skin and eye contact. Maintain high standards of personal hygiene.

Storage: Store in a cool, dry, well-ventilated magazine licenced for Class 1.1D explosives. Keep storage area free of sources of shock, friction, heat, ignition and combustible materials. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for damage and spills. Have appropriate fire extinguishers available in and near the storage area. Reference should be made to AS2187.1- 1998 Explosives – Storage, transport and use – Storage, and to all state and federal regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters: No exposure standards have been established for this material by SafeWork Australia, however, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and exposure should be kept to the lowest possible levels.

Appropriate Engineering Controls: Use in a well ventilated area. All personnel should be removed to a safe location and protected from air blast and fly rock during blasting operations.

Individual Protection Measures, such as Personal Protective Equipment (PPE): Safety glasses with side shields, goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection should conform to Australian / New Zealand Standard AS/NZS 1337 – Eye Protectors for Industrial Applications.

Wear gloves of impervious material (PVC or neoprene). Final choice of gloves will vary according to individual circumstances. Reference should be made to Australian / New Zealand Standard AS/NZS 2616.1: – Occupational protective gloves – Selection, use and maintenance.

Wear appropriate clothing such as a chemical resistant apron where large quantities are handled clothing is likely to be contaminated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Small granular spheres, oily to touch.

Odour: Slight fuel oil.

Flammability: Explosive material – avoid all ignition sources and sources of heat.

Flash Point: Not applicable

Boiling Point: Not applicable

Melting Point: Not applicable

Evaporation Rate:	Not applicable
pH:	Not applicable
Vapour Density:	Not applicable
Specific Gravity:	0.80 g/cm
Solubility (water):	Moderately soluble.

10. STABILITY AND REACTIVITY

Reactivity:	Explosive. Explosion can result due to shock, friction, fire and other sources of ignition. Detonation may occur form heavy impact or excessive heating, particularly under confinement.
Possibility of Hazardous Reactions:	Hazardous polymerisation will not occur. A major fire may involve the risk of explosion. An adjacent detonation may also involve the risk of explosive. Heating can cause expansion or decomposition of the material which can lead to containers exploding.
Conditions to Avoid:	Avoid exposure to heat, sources of ignition, static electricity discharge, open flame, shock and friction. Avoid contact with other chemicals including strong acids, alkalis and oxidising agents.
Incompatible Materials:	Incompatible with strong acids, alkalis, combustible materials, permanganates and strong oxidising agents. Ammonium nitrate is a powerful oxidising agent and is incompatible with tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, bromates, chlorates, chlorites, hypochlorites, perchlorates, permanganates, chloroisocyanurate, nitrites and powdered metals.
Hazardous Decomposition Products:	Thermal decomposition may result in the release of irritating and/or toxic fumes including ammonia and oxides of nitrogen and carbon. When mixed with strong acids, and occasionally during blasting, it produces an irritating toxic brown gas, mostly of nitrogen dioxide. When molten, may decompose violently due to shock or pressure.

11. TOXICOLOGICAL INFORMATION

Toxicology Information:	No adverse health effects are expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms that may arise if the product is mishandled and overexposure occurs are:
Inhalation:	Inhalation of product vapours may cause irritation of the nose, throat and respiratory system. Blasting may produce a toxic brown gas of nitrogen dioxide. Inhalation of the gas may result in chest discomfort, shortness of breath and possible pulmonary oedema, the onset of which may be delayed.
Ingestion:	Not a likely source of exposure. Ingestion of product may irritate the gastric tract causing nausea and vomiting.
Skin:	Irritating to skin. Skin contact may cause redness, itching and irritation. Repeated or prolonged contact may cause dryness and cracking and may lead to irritant contact dermatitis.
Eye:	Exposure may cause irritation, tearing, stinging, blurred vision and redness.

Long Term Effects:	Prolonged or repeated skin contact may cause irritant contact dermatitis.
Toxicological Data / Carcinogenity:	No LD50 data available for this product. For the constituent Ammonium Nitrate: Oral LD50 (rat): 2217 mg/kg. Diesel fuel oil has been known to e carcinogenic in animal tests and has caused mutations in vitro. Repeated dermal exposures to high concentrations in test animals resulted in litter size and litter weight and increased foetal resorptions at maternally toxic doses. This substance is classified as a Category 3 Carcinogen according to National Occupational Health and Safety Commission (NOHSC). There is some evidence from appropriate animal studies that human exposure to this substance may result in the development of cancer, but this evidence is insufficient to place the substance in Category 2. Category 3 Carcinogens are substances that cause concern for humans owing to possible carcinogenic effects.
Chronic Effects:	Prolonged, repeated skin contact with mineral oils may cause irritant contact dermatitis.
Other Information:	In humans and animals, methaemoglobinaemia has occurred under untreated conditions following the ingestion of nitrates.

12. ECOLOGICAL INFORMATION

Toxicity:	Harmful to aquatic organisms. May cause long term adverse effects in the aquatic environment. No data available for this product. The constituent Ammonium Nitrate was evaluated at 5, 10, 25 and 50mg (NH4+)/L. The fertility of Daphnia magna was decreased at 50mg/L. Post embryonic growth of crustacean was impaired at 10, 25 and 50mg/L.
Persistence and Degradability:	No data available for this product.
Bioaccumulative Potential:	No data available for this product.
Mobility in Soil:	No data available for this product.
Other Adverse Effects:	No data available for this product.

13. DISPOSAL CONSIDERATIONS

Disposal Methods:	Destruction of explosives must only be carried out by suitably qualified and licensed personnel. Disposal of material may be undertaken through a licensed waste contractor. If necessary, the relevant Statutory Authorities must be notified. In all circumstances, detonation is the preferred method of disposal. Small quantities of damaged or deteriorated explosives may be destroyed by inclusion in a blast hold containing good explosive material. Personnel must be evacuated to a safe distance in accordance with relevant local regulations prior to initiation of the charge.

NOTE: Detonations in loose or stony ground may be expected to cause fly rock.

If assistance is required regarding the disposal of waste product, please contact a Nitro Sibir Australia representative.

14. TRANSPORT CONSIDERATIONS

ROAD AND RAIL TRANSPORT

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

UN Number: UN0082
Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE B
Dangerous Goods Class: 1.1D
HAZCHEM Code: E

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for Transport by Sea; DANGEROUS GOODS.

UN Number:	UN0082
Hazard Class:	1.1D
Proper Shipping Name:	EXPLOSIVE, BLASTING, TYPE B
IMDG EMS Fire:	F-B
IMDG EMS Spill:	S-Y

AIR TRANSPORT

Transport prohibited under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in Passenger and Cargo Aircraft, and Cargo Aircraft Only.

15. REGULATORY INFORMATION

Classification:	Classified as Hazardous according to Safe Work Australia; HAZARDOUS SUBSTANCE.
Hazard Category:	Xn: Harmful Explosive: Division 1.1
Risk Phrase(s):	**R2:** Risk of explosion by shock, friction, fire or other sources of ignition. **R40(3):** Possible risk of irreversible effects.
Safety Phrase(s):	**S34:** Avoid shock and friction. **S35:** This material and its container must be disposed of in a safe way. **S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection. **S53:** Avoid exposure - obtain special instructions before use.
Poisons Schedule:	A poison schedule number has NOT been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Inventory Listing(s): AICS (Australian Inventory of Chemical Substances): All components are listed on AICS.

16. OTHER INFORMATION

The information contained in this SDS is believed to be accurate and has been obtained from sources considered reliable. Users of this information should make their own investigations to determine the suitability of the information for their particular use or situation. NITRO SIBIR AUSTRALIA does not in any way warrant or imply the applicability, viability or use of this information to any person, for use in any situation.

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