1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: ANFO

Company Name: Dyno Nobel Asia Pacific Pty Limited
Address: 282 Paringa Road
Gibson Island
Murarrie, QLD 4172
Australia

Emergency Tel.: 1800 098 836
Tel.: (07) 3026 3900
Fax: (07) 3026 3999

Recommended Use: Bulk or packaged ANFO

2. HAZARDS IDENTIFICATION

Classified as hazardous, according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC).

Classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Nitrate</td>
<td>6484-52-2</td>
<td>&gt;90 %</td>
</tr>
<tr>
<td>Fuel, diesel No. 2</td>
<td>68476-34-6</td>
<td>&lt;10 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms persist seek medical attention.

Ingestion: Do not induce vomiting. Wash out mouth thoroughly with water. If symptoms develop seek medical attention.

Skin: Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.

Eye: If dust in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and persist seek medical attention.

First Aid Facilities: Eyewash and normal washroom facilities.

Advice to Doctor: Treat symptomatically.

Other Information: For advice in an emergency, contact a Poisons Information Centre (Phone Australia 13 1126; New Zealand 0800 POISON / 0800 764 766) or a doctor at once.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: DO NOT FIGHT FIRES. Immediately isolate area and evacuate personnel to a safe distance.
Classified as hazardous

Hazards from Combustion Products: Under fire conditions this product may emit toxic and/or irritating fumes and gases including oxides of nitrogen, ammonia, nitric acid, carbon monoxide, carbon dioxide and other toxic material.

Specific Hazards: Extreme risk of explosion by shock, friction, fire or other sources of ignition. In case of all fires involving detonators, evacuate the area immediately. DO NOT FIGHT FIRES.

Hazchem Code: E

Precautions in connection with Fire: Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Use water spray to disperse vapours.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Protect from all ignition sources. In case of fire evacuate all personnel to a safe distant area and allow to burn or fight fire remotely. Avoid breathing fumes or gases from detonation of explosives. Notify authorities in accordance with emergency response procedures. Only personnel trained in emergency response should respond. If no fire danger is present, and product is undamaged and/or uncontaminated, repackage product in original packaging or other clean approved container. Ensure that a complete account of product has been made and is verified. If loose explosive powder is spilled, such as from a broken detonator, only properly qualified and authorised personnel should be involved with handling and clean-up activities. Spilled explosive powder is extremely sensitive to initiation and may detonate. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Only properly qualified and authorised personnel should handle and use explosives. Handle with great care. Unintended detonation of explosives or explosive devices can cause serious injury or death. Use in designated areas with adequate ventilation. Avoid sources of shock, friction, heat and ignition. Avoid contact with oxidising materials. Detonation in confined or unventilated areas may result in exposure to hazardous fumes or oxygen deficiency. Have emergency equipment (for spills, leaks, etc.) readily available. Label containers. Keep containers closed when not in use. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. Maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for Safe Storage: Store in cool, dry, well-ventilated location. Only properly qualified and authorised personnel should handle and use explosives. Store in a well-ventilated, clean, dry magazine. Handle with care. Do not subject materials to impact, sparks or any form of heating, ignition sources, friction, electrostatic discharge and strong shock. Have appropriate fire extinguishers available in and near the storage area. Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous. Reference should be made to AS 2187.2-2006 Explosives - Storage, transport and use - Storage. Reference should also be made to all Local, State and Federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards: No exposure standards have been established for the mixture by Safe Work, Australia. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

Biological Limit Values: No biological limits allocated.

Engineering Controls: Use with good general ventilation. If mists or vapours are produced, local exhaust ventilation should be used.

Respiratory Protection: If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable organic vapour filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection: 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 i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material e.g. PVC or neoprene gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection
Suitable protective work wear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Pale, oil-covered prills

Odour: Fuel oil

Melting Point: Not available

Boiling Point: Not available

Solubility in Water: Soluble

Specific Gravity: Not available

pH Value: Not available

Vapour Pressure: Not available

Vapour Density (Air=1): Not available

Flash Point: Not available

Flammability: Explosive type 1.1D

Auto-Ignition Temperature: Not available

Flammable Limits - Lower: Not available

Flammable Limits - Upper: Not available

10. STABILITY AND REACTIVITY

Conditions to Avoid: Avoid sources of heat and incompatible materials.

Incompatible Materials: Avoid contact with other explosives, pyrotechnics, solvents, acids, alkalis, reducing agents, amines, phosphorous, organic materials/compounds, finely divided combustible materials, finely divided metals and metal oxides.

Hazardous Decomposition Products: Thermal decomposition may result in the release of toxic and/or irritating fumes including oxides of nitrogen, ammonia, nitric acid, carbon monoxide, carbon dioxide and other toxic material.

11. TOXICOLOGICAL INFORMATION

Toxicology Information: No toxicity data available for this product.

Inhalation: Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

Ingestion: Ingestion of this product may irritate the gastric tract causing nausea and vomiting.

Skin: May be irritating to skin. The symptoms may include redness, itching and swelling.

Eye: May be irritating to eyes. The symptoms may include redness, itching and tearing.
Safety Data Sheet

Infosafe No™ CV4SY Issue Date: August 2012 ISSUED by DYNO NOBEL

Product Name: ANFO

Classified as hazardous

Chronic Effects
Prolonged, repeated skin contact with mineral oils may cause irritant contact dermatitis.

Carcinogenicity
This substance is classified as a Category 3 Carcinogen according to National Occupational Health and Safety Commission (NOHSC). That is, 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.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No ecological data are available for this material.

Persistence / Degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Environ. Protection
Do not discharge this material into waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations
Destruction of explosives must be carried out by suitably qualified personnel. If necessary, the relevant statutory authorities must be notified. In all circumstances, detonation is the preferred method disposal. The explosives to be destroyed must be placed in direct contact with fresh priming charge in a hole and then adequately stemmed. No detonators are to be inserted into defective explosives. 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.

14. TRANSPORT INFORMATION

Australia Road and Rail:
This material is classified as a Class 1 (Explosives) Dangerous Goods according to The Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition) and Australian Code for the Transport of Explosives (3rd edition).
Class 1 Dangerous Goods are incompatible in a placard load with any of the following:
- Division 2.1, Flammable Gases
- Division 2.2, Non-flammable Non-toxic Gases
- Division 2.3, Toxic Gases
- Class 3, Flammable Liquids
- Division 4.1, Flammable Solids
- Division 4.2, Spontaneously Combustible Substances
- Division 4.3, Dangerous When Wet Substances
- Division 5.1, Oxidising Agents
- Division 5.2, Organic Peroxides
- Class 6, Toxic and Infectious Substances
- Class 7, Radioactive Substances
- Class 8, Corrosive Substances
- Class 9 - Miscellaneous Dangerous Goods
- Fire risk substances

Marine Transport (IMO/IMDG):
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
UN No.: 0082
Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE B
Class: 1.1D
Packaging Group: (*)&see ‘Other information’
EMS No.: F-B, S-Y
### Safety Data Sheet

**Product Name:** ANFO

**Classified as hazardous**

**Special Provision:** None

**Air Transport (ICAO/IATA):**
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

- **UN No.:** 0082
- **Proper Shipping Name:** EXPLOSIVE, BLASTING, TYPE B
- **Class:** 1.1D
- **Packaging Group:** (*see ‘Other information’
- **Label:** None
- **Packaging Instructions (passenger & cargo):** Forbidden
- **Packaging Instructions (cargo only):** Forbidden

<table>
<thead>
<tr>
<th>U.N. Number</th>
<th>EXPLOSIVE, BLASTING, TYPE B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proper Shipping Name</strong></td>
<td>EXPLOSIVE, BLASTING, TYPE B</td>
</tr>
<tr>
<td><strong>DG Class</strong></td>
<td>1.1D</td>
</tr>
<tr>
<td><strong>Hazchem Code</strong></td>
<td>E</td>
</tr>
<tr>
<td><strong>Packaging Method</strong></td>
<td>E8</td>
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<tr>
<td><strong>Packing Group</strong></td>
<td>(*see ‘Other information’</td>
</tr>
<tr>
<td><strong>EPG Number</strong></td>
<td>EXP1</td>
</tr>
<tr>
<td><strong>IERG Number</strong></td>
<td>02</td>
</tr>
<tr>
<td><strong>IMDG Marine Pollutant No (MP)</strong></td>
<td>EXP1</td>
</tr>
</tbody>
</table>

(*unless specific provision to the contrary is made, the packagings used for explosives shall comply with at least the requirements for solids or liquids (as appropriate) of Packing Group II (medium danger).

Further information related to packaging, IBCS and Unit loads for explosives can be obtained from Australian Explosives Code.

### 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>Classified as Hazardous according to criteria of National Occupational Health &amp; Safety Commission (NOHSC), Australia. Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poison Schedule</strong></td>
<td>S5</td>
</tr>
<tr>
<td><strong>Hazard Category</strong></td>
<td>Harmful, Explosive</td>
</tr>
<tr>
<td><strong>AICS (Australia)</strong></td>
<td>All components of this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempted.</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

- **Date of preparation or MSDS Reviewed:** August 2012
- **last revision of MSDS:** June 2007

**Contact Person/Point**

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MT Thorley Technical Centre
Telephone: +61 2 6574 2500
Fax: +61 2 65 74 6849

**DISCLAIMER:** The information and suggestions above concern explosive products which should only be dealt with by persons having appropriate technical skills, training and licences. The results
Classified as hazardous

depend to a large degree on the conditions under which the products are stored, transported and used. While Dyno Nobel Asia Pacific makes 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 Dyno Nobel Asia Pacific Limited's 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. Buyers and users assume all risk, responsibility and liability arising from the use of this product and the information in this data sheet. Dyno Nobel Asia Pacific Limited is not responsible for damages of any nature resulting from the use of its products or reliance upon the information. Dyno Nobel Asia Pacific Limited makes no express or implied warranties other than those implied mandatory by Commonwealth, State or Territory legislation.

...End Of MSDS...