1. IDENTIFICATION

GHS Product Identifier
POWERMITE® RIGHT SERIES

Product Code

Company Name
Dyno Nobel Asia Pacific Pty Limited

Address
282 Paringa Road
Gibson Island
Murarrie, QLD 4172
Australia

Telephone/Fax Number
Tel: (07) 3026 3900
Fax: (07) 3026 3999

Emergency phone number
1800 098 836

Recommended use of the chemical and restrictions on use
Mining, quarrying and general blasting work.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

GHS classification:
Explosives: Division 1.1

Signal Word (s)
DANGER

Hazard Statement (s)
H201 Explosive; mass explosion hazard.

Pictogram (s)
Exploding bomb
Precautionary statement – Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P230 Keep wetted with water.
P240 Ground/bond container and receiving equipment.
P250 Do not subject to grinding/shock/friction.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – 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.

Precautionary statement – Storage
P401 Store in a cool, dry, well ventilated

Precautionary statement – Disposal
P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Nitrate</td>
<td>6484-52-2</td>
<td>60-100 %</td>
</tr>
<tr>
<td>Non hazardous components</td>
<td></td>
<td>10-30 %</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Inhalation
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.
Unlikely route of exposure unless detonator is fired.

Ingestion
Not considered a potential route of exposure.
Unlikely route of exposure unless detonator is fired.

Skin
Remove all contaminated clothing immediately. Clothing frozen to the skin should be thawed before being removed. Wash affected area thoroughly with soap and water. For Frostbite: Flush affected areas with lukewarm water. Do not use hot water. Treat as thermal burns. Seek IMMEDIATE medical attention.
Unlikely route of exposure unless detonator is fired.

Eye contact
If eye tissue is frozen, seek IMMEDIATE medical attention. If tissue is not frozen, immediately irrigate with copious amounts of water for at least 15 minutes. Remove contact lenses. Eyelids to be held open. Seek medical attention.
Unlikely route of exposure unless detonator is fired.

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 or a doctor at once. (131 126)
5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use only remote or fixed extinguishing systems (sprinklers).
DO NOT FIGHT FIRES. Immediately isolate area and evacuate personnel to a safe distance.

Hazards from Combustion Products
Thermal decomposition may result in the release of toxic and/or irritating fumes including ammonia and oxides of nitrogen.

Specific Hazards Arising From The Chemical
Explosive material. In case of a small fire, if actual explosive is not burning, carefully remove as much explosive as possible to a safe distance. However if explosive is burning, evacuate area immediately. DO NOT fight fire. Decomposes on heating emitting irritating white fumes of nitrous oxides and ammonium nitrate mist. Brown fumes indicate the presence of toxic oxides of nitrogen.

Hazchem Code
E

Precautions in connection with Fire
Do not attempt to fight fires involving explosive materials. In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use only remote or fixed extinguishing systems (sprinklers).

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures
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.

Wear appropriate personal protective equipment and clothing to minimise exposure. Clear area of all unprotected personnel. Shut off all ignition sources. Use spark free shovels. In the case of a transport accident notify the State Police and State Explosives Inspector. Only competent, experienced persons should be involved in cleanup procedures.

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, including any incompatibilities
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. Ensure that storage conditions comply with applicable local and national regulations.

Reference should be made to Australian Standard AS 2187 Explosives - Storage, transport and use - Storage.

Additional information on precautions for use
Product deterioration: The process of deterioration is a gradual breaking down of the emulsion phase together with crystallisation and caking of ammonium nitrate. If there are signs of deterioration the product should be test fired before use.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values
No exposure standards have been established for the mixture. 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.

Appropriate Engineering Controls
Provide sufficient ventilation to keep airborne levels as low as possible. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required.

Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian 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, chemical 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 devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material such as PE, 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. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection
Suitable protective workwear, 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

<table>
<thead>
<tr>
<th>Properties</th>
<th>Description</th>
<th>Properties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Solid</td>
<td>Appearance</td>
<td>Grey to cream mixture, with a faint odour, cartridge into plastic 'sausages' with metal clips at both ends.</td>
</tr>
<tr>
<td>Colour</td>
<td>Grey</td>
<td>Odour</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
<td>Vapour Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour Density (Air=1)</td>
<td>Not available</td>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>Not available</td>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>Not available</td>
<td>Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available</td>
<td>Flammability</td>
<td>Explosive. Eliminate all ignition sources.</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

**Chemical Stability**
Detonation may occur from heavy impact or excessive heating, particularly under confinement. Avoid contact with other chemicals.

**Reactivity and Stability**
Reacts with incompatible materials

**Conditions to Avoid**
Heat, other sources of ignition, and incompatible materials

**Incompatible materials**
Detonation may occur from heavy impact or excessive heating, particularly under confinement. Avoid contact with any other chemical.

**Hazardous Decomposition Products**
Thermal decomposition may result in the release of toxic and/or irritating fumes including ammonia and oxides of nitrogen.

**Possibility of hazardous reactions**
Not available

**Hazardous Polymerization**
Will not occur.

11. TOXICOLOGICAL INFORMATION

**Toxicology Information**
No toxicity data available for this material.

**Ingestion**
Ingestion unlikely due to form of product.

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

**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.

**Respiratory sensitisation**
Not expected to be a respiratory sensitiser.

**Skin Sensitisation**
Not expected to be a skin sensitiser.

**Germ cell mutagenicity**
Not considered to be a mutagenic hazard.

**Carcinogenicity**
Not considered to be a carcinogenic hazard.

**Reproductive Toxicity**
Not considered to be toxic to reproduction.

**STOT-single exposure**
Not expected to cause toxicity to a specific target organ.

**STOT-repeated exposure**
Not expected to cause toxicity to a specific target organ.

**Aspiration Hazard**
Not expected to be an aspiration hazard.

**Other Information**
Prolonged or repeated skin contact may cause defatting leading to dermatitis.
As a result of detonation of this product, oxides of nitrogen fumes may be liberated. Nitrogen oxides are skin, eye and respiratory
system irritants. Systematic toxicity resulting from oxidation of lung tissue and bronchopneumonia. Acute exposure can lead to
death from asphyxia or pulmonary oedema. In animals, nitrogen oxide caused methemoglobinemia, was not carcinogenic, but
caused embryotoxicity and reproductive effects.

Carbon dioxide is a colourless, odourless gas. It is a simple asphyxiant, attacking the lungs, skin and cardiovascular system.
Concentrations of 5% may produce shortness of breath and headache and concentrations of 10% can produce unconsciousness
and death from oxygen deficiency. Adequate ventilation will provide sufficient protection from any carbon dioxide accumulations.

Carbon monoxide is a colourless, odourless, tasteless gas which, when inhaled, combines with haemoglobin to form
carboxyhemoglobin which interferes with the oxygen-carrying capacity of blood. Resulting symptoms include headache, dizziness,
drowsiness, nausea, vomiting, collapse, coma and death. Carbon monoxide attacks the central nervous system, lungs, blood and
cardiovascular system.
This product contains an asphyxiant and the minimum oxygen content in air should be 19.5% by volume under normal
atmospheric pressure.

Do not enter any area where accumulations of these gases are suspected without appropriate breathing apparatus.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No ecological data are available for this material.

Persistence and degradability
Not available

Mobility
Not available

Bioaccumulative Potential
Not available

Other Adverse Effects
Not available

Environmental 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 of 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

Transport Information
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.
Class/Division: 1.1D
UN No: 0241
Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE E
EMS : F-B,S-X

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
Class/Division: 1.1D
UN No: 0241
Proper Shipping Name: Explosive, blasting, type E
Packaging Instructions (passenger & cargo): Forbidden
Packaging Instructions (cargo only): Forbidden

U.N. Number
0241
UN proper shipping name
EXPLOSIVE, BLASTING, TYPE E
Transport hazard class(es)
1.1D
Hazchem Code
E
IERG Number
02
IMDG Marine pollutant
No

15. REGULATORY INFORMATION

Regulatory information
Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia
Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule
Not Scheduled

16. OTHER INFORMATION

Date of preparation or last revision of SDS
SDS Reviewed: March 2015
Supersedes: April 2010

References
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice
Standard for the Uniform Scheduling of Medicines and Poisons.
Australian Code for the Transport of Dangerous Goods by Road & Rail.
Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work Australia.

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

**Contact Person/Point**
Dyno Nobel Asia Pacific Limited
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 adequate technical skills, training and licences. The results depend to a large degree on the conditions under which the products are stored, transported and used.

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