1. IDENTIFICATION

GHS Product Identifier
TITAN BLASTLITE

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
Blasting explosive for soft to medium strength rock mining applications.

Other Names

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITAN BLASTLITE 30</td>
<td></td>
</tr>
<tr>
<td>TITAN BLASTLITE 55</td>
<td></td>
</tr>
</tbody>
</table>

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)

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.
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 accordance with AS 2187.1-1998 Explosives - Storage, transport and use - Storage.

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

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>35-80 %</td>
</tr>
<tr>
<td>Oils and other oxygen negative materials</td>
<td></td>
<td>0-&lt;10 %</td>
</tr>
<tr>
<td>Other ingredients determined not to be hazardous, including water</td>
<td></td>
<td>Balance</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.

Ingestion
If swallowed, do NOT induce vomiting. Wash out mouth with water. Seek medical attention.

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

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

First Aid Facilities
Eye wash and normal washroom facilities.

Advice to Doctor
Treat symptomatically.

Other Information
For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use only remote or fixed extinguishing systems (sprinklers).
Hazards from Combustion Products
Under fire conditions this product may emit toxic and/or irritating fumes including oxides of nitrogen.

Specific Hazards Arising From The Chemical
Explosion risk in case of fire. In case of fire: Evacuate area. DO NOT fight fire when fire reaches explosives.

Hazchem Code
E

Decomposition Temperature
Not available

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. 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, including any incompatibilities
Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Keep away from heat, sparks, open flames, hot surfaces. Take precautions against static electricity discharges. Do not subject to friction. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations. Avoid any contamination of this material. 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/PERSOanal 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 limit allocated.

Appropriate Engineering Controls
Use only in a well ventilated area. Where dust/mist/vapour are generated and/or natural ventilation is inadequate, a local exhaust ventilation system is recommended.
Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then suitable respiratory protective equipment should be used. 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. Final choice of appropriate respiratory protection will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.

Eye Protection
Safety glasses with side shields or goggles should be worn as described in Australian Standard AS/NZS 1337 - Eye Protectors for Industrial Applications. Final choice of appropriate eye/face protection will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.

Hand Protection
Wear gloves of impervious material. 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 workwear should be worn to protect personal clothing, e.g. cotton overalls buttoned at neck and wrist. When large quantities are handled the use of plastic aprons and rubber boots is recommended.

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>Appearance</td>
<td>Brown/pinkish fibrous material with small white spheres with oily appearance</td>
<td>Colour</td>
<td>Brown/pinkish</td>
</tr>
<tr>
<td>Odour</td>
<td>Not available</td>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Fibrous material is insoluble but may be dispersed with water jet</td>
<td>Solubility in Organic Solvents</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.65g/cm³ - 1.15g/cm³</td>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not applicable</td>
<td>Vapour Density (Air=1)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
<td>Odour Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
<td>Partition Coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
<td>Flammability</td>
<td>May explode in fires. A strong oxidising agent. Will support the combustion of other materials.</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not applicable</td>
<td>Flammable Limits - Lower</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammable Limits - Upper</td>
<td>Not applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Reacts with incompatible materials

Chemical Stability
Risk of explosion in the presence of combustible materials.

Conditions to Avoid
Keep away from sources of ignition, heat, static electricity discharges, friction.
Incompatible materials
Oxidising agents, combustible material.

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

**Hazardous Polymerization**
Not available

# 11. TOXICOLOGICAL INFORMATION

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

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

**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. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.

**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.

# 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
No data are available for this specific product.

**Persistence and degradability**
Not available

**Mobility**
Not available

**Bioaccumulative Potential**
Not available

**Environmental Protection**
Prevent this material entering waterways, drains and sewers.
13. DISPOSAL CONSIDERATIONS

Disposal considerations
Destruction of explosives must be carried out by suitably qualified personnel. Contact Dyno Nobel for further information.

14. TRANSPORT INFORMATION

Transport Information
Road and Rail:
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.
Division: 1.1D
Packaging Group: see 'Other information' (*)
EmS: F-B,S-X
UN-No: 0241
Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE E
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: 0241
Division: 1.1D
Packaging Group: see 'Other information' (*)
Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE E
Packaging Instructions (cargo): Forbidden
Packaging Instructions (passenger): Forbidden
Special Provision: None
Label: None

U.N. Number
0241

UN proper shipping name
EXPLOSIVE, BLASTING, TYPE E

Transport hazard class(es)
1.1D

Packing Group
see 'Other information' (*)
Hazchem Code
E

IERG Number
02

IMDG Marine pollutant
No

Other Information
(*) 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

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: May 2014
Supersedes: June 2007

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 appropriate 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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END OF SDS

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