

# SAFETY DATA SHEET



## TITAN XERO

Infosafe No.: LQ450  
ISSUED Date: 15/01/2015  
Issued by: Dyno Nobel Asia Pacific Pty  
Limited

### 1. IDENTIFICATION

**GHS Product Identifier**

TITAN XERO

**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**

Bulk blasting agent for use in soft, wet holes comprising a bulking agent. Gassing of the product achieves explosive sensitization.

**Other Names**

Name	Product Code
TITAN 2000XERO	
TITAN 3000XERO	
TITAN 5000XERO	
TITAN 9000XERO	

### 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

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**Ingredients**

Name	CAS	Proportion
Ammonium Nitrate	6484-52-2	30-80 %
Oils and other oxygen negative materials		0-10 %
Other ingredients determined not to be hazardous, including water		Balance

### 4. FIRST-AID MEASURES

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**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

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### **Suitable Extinguishing Media**

DO NOT FIGHT FIRES. Immediately isolate area and evacuate personnel to a safe distance.

### **Hazards from Combustion Products**

Under fire conditions this product may emit toxic and/or irritating fumes including carbon monoxide, carbon dioxide and oxides of nitrogen.

### **Specific Methods**

DO NOT FIGHT LARGE FIRES. If a fire becomes established immediately isolate area and evacuate personnel to a safe distance. Toxic fumes may be generated as the product decomposes.

### **Specific Hazards Arising From The Chemical**

Not known to be a fire hazard under normal conditions of use. Will explode if suitably primed. Avoid extreme conditions of heat or shock.

### **Hazchem Code**

E

### **Decomposition Temperature**

Not available

### **Precautions in connection with Fire**

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers.

## 6. ACCIDENTAL RELEASE MEASURES

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### **Emergency Procedures**

Wear appropriate personal protective equipment and clothing to minimise exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill.

Small spills should be scooped up and placed in clean, approved containers which are then labelled and sealed. Where possible, all residues should be scraped up for disposal and an inert absorbent material such as sand or vermiculite spread over the area.

For large spills, collect as much of the material as possible and place in clean, approved containers which are then labelled and sealed.

Contaminated bulk product recovered from a spill should be passed through a 10mm screen before pumping. The screened material should then only be pumped using a double diaphragm positive displacement pump.

Surplus or defective explosives must not be placed in any waterway, thrown away, discarded or placed with rubbish.

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

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### **Precautions for Safe Handling**

DO NOT subject the product to impact, friction or heating. Do not drill into the explosive. Have appropriate fire extinguishers available in and near the storage area. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet.

### **Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well-ventilated location away from heat, sources of ignition, oxidising agents, foodstuffs, and clothing and out of direct sunlight. Only properly qualified and authorised personnel should handle and use explosives. 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. 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

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### **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.

### **Other Exposure Information**

As a result of detonation of this product, oxides of nitrogen, carbon dioxide and carbon monoxide may be liberated.

Nitrogen oxides are skin, eye and respiratory system irritants. Acute exposure can lead to death from asphyxia or pulmonary oedema. In animals, nitrogen oxide 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 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. Do not enter any area where accumulations of these gases are suspected without appropriate breathing apparatus.

### **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. Refer to AS1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

### **Respiratory Protection**

If engineering controls are not effective in controlling airborne exposure then respiratory protective equipment should be used. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. 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.

### **Eye Protection**

Safety glasses with side shields, goggles or full-face shield as appropriate recommended. 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 such as neoprene. 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**

Wear appropriate clothing including chemical resistant apron where clothing is likely to be contaminated. It is advisable that a local supplier of personal protective clothing is consulted regarding the choice of material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Appearance	Translucent emulsion with granulised bulk additive and small gas bubbles, oily to touch.	Colour	Not available
Odour	Slightly fuel oil odour.	Decomposition Temperature	Not available
Melting Point	Not applicable	Boiling Point	Not applicable
Solubility in Water	Insoluble but dispersible with water jets.	Solubility in Organic Solvents	Not available
Specific Gravity	0.8 - 1.15	pH	Not applicable
Vapour Pressure	Not applicable	Vapour Density (Air=1)	Not applicable
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	Not available	Partition Coefficient: n-octanol/water	Not available
Flash Point	Not applicable	Flammability	May cause detonation.
Auto-Ignition Temperature	Not applicable	Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable		

## 10. STABILITY AND REACTIVITY

### Reactivity

Reacts with incompatible materials.

### Chemical Stability

Stable under normal conditions of storage and handling.

### Conditions to Avoid

Do not allow product to burn as this may cause detonation.

### Incompatible materials

Oxidising agents, combustible material.

### Hazardous Decomposition Products

Thermal decomposition may result in the release of toxic and/or irritating fumes including carbon monoxide, carbon dioxide and oxides of nitrogen.

### Possibility of hazardous reactions

This product may detonate on burning.

### Hazardous Polymerization

Not available

## 11. TOXICOLOGICAL INFORMATION

### Toxicology Information

No toxicity data available for this material. The available acute toxicity data for the ingredients are given below.

### Acute Toxicity - Oral

Ammonium nitrate:

LD50 (Rat): 2,217 mg/kg

### 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

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**Ecotoxicity**

No ecological data available for this material.

**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

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**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.

**BURNING:**

Burning may result in the detonation of explosives. Burning explosives produces toxic fumes e.g. oxides of nitrogen and carbon. Make a sawdust bed or trail adequate for the quantity of explosives to be burned approximately 400mm wide and 40mm deep, upon which the explosive will be laid. If sawdust is not available, newspaper may be used. Normal precautions should be taken against the spread of fire.

Individual trails should not be closer together than 600mm and should contain not more than 12kg of explosive. Trails should be

side-by-side, not in a line, and not more than four should be

set up at one time. Remove any explosive that is not to be burnt to a distance of at least 300m.

Sufficient diesel oil (never petrol or other highly flammable liquid) should be used to thoroughly wet the sawdust (or paper). At least 4L per trail is recommended.

Light the trail from a long rolled paper 'wick' which should be placed downwind and in contact with the 1m of trail which is not covered with explosive. The wind should blow so that the flame from the wick (and later from the burning explosives) will blow away from the unburned explosives as detonation is more likely to occur if the explosives are preheated by the flame.

If plastic igniter cord (slow) is available, its use for lighting is recommended instead of paper. One end should be coiled into the sawdust or under the paper and the other end lit from a minimum distance of 7m from the trail. Retire to at least 300m or to a safe place.

Do not return to the site for at least 30 min after the burning has apparently finished.

If the fire goes out do not approach for at least 15 minutes after all traces of fire has gone. Do not add more diesel oil unless certain that the flame is completely extinguished.

## 14. TRANSPORT INFORMATION

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### 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

### 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

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**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

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**Date of preparation or last revision of SDS**

SDS Created: January 2015

**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**

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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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