

SAFETY DATA SHEET

DYNO[®]
Dyno Nobel

Z-BAR[®]

Infosafe No.: LPWFF
ISSUED Date: 18/07/2017
Issued by: Dyno Nobel Asia Pacific Pty
Limited

1. IDENTIFICATION

GHS Product Identifier

Z-BAR[®]

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.

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)

Carcinogenicity: Category 2

Explosives: Division 1.1

Eye Damage/Irritation: Category 2A

Signal Word (s)

DANGER

Hazard Statement (s)

H201 Explosive; mass explosion hazard.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

Pictogram (s)

Exploding bomb, Exclamation mark, Health hazard



Precautionary statement – Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P250 Do not subject to grinding/shock/friction.
- P264 Wash contaminated skin thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- 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 according to manufacturer's instructions and section 7 of this SDS.
- P405 Store locked up.

Precautionary statement – Disposal

- P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Ammonium Nitrate	6484-52-2	>70 %
Diesel Fuel	68334-30-5	1-10 %
Aluminium	7429-90-5	1-10 %
Pentaerythritol tetranitrate	78-11-5	10g/m

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

Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

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. Seek medical attention.

First Aid Facilities

Eyewash, safety shower 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.

Specific Hazards Arising From The Chemical

Extreme risk of explosion by shock, friction, fire or other sources of ignition. 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

Explosive material. Avoid all ignition sources.

In case of a small fire, if actual explosive is not burning, carefully remove as much explosive as possible to a safe distance. Fire fighters to wear self-contained breathing apparatus if risk of exposure to vapour or products of combustion. However, if explosive is burning, evacuate area immediately. Do NOT fight fire. On burning under confined, or semi-confined conditions, some oxides of nitrogen and/or carbon monoxide will be present. Brown fumes indicate the presence of toxic oxides of nitrogen.

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.

In all circumstances, detonation is the preferred method of disposal. The residue from spills and the burning of explosives may be toxic to livestock and/or wildlife. Remove all sources of heat, sparks, flame, friction or electricity. Shovel or sweep up. Recover material into suitably labelled containers.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use smallest possible amounts in designated areas with adequate ventilation.

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 shock, friction, heat, sparks, open flames, hot surfaces, sources of ignition, oxidising agents, strong acids, foodstuffs and combustible materials.

Only properly qualified and authorised personnel should handle and use explosives. 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. Take precautions against static electricity discharges. 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.

For information on the design of the storeroom, reference should be made to Australian Standard AS 2187 Explosives - Storage, transport and use.

Additional information on precautions for use

Avoid skin and eye contact. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Do NOT drill into explosive. Avoid all contact with other chemicals.

Product deterioration: The process of deterioration is a gradual crystallisation and caking of the 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 value assigned for this specific material. However, the available exposure limits for battery contents are given below:

Aluminium (metal dust) (as Al)

TWA: 10 mg/m³

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Biological Limit Values

No biological limits allocated.

Appropriate Engineering Controls

This substance is hazardous and should be used in a well ventilated area. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, a suitable local ventilation should be used or suitable respiratory protection must be worn. If local exhaust ventilation is used, ensure sufficient air is replaced to compensate the air that has been removed.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapour/particulate 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 PVC and neoprene. 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. 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
Form	Article - Containing Chemical	Appearance	Z-Bar Edge consists of 20mm ID Yellow Plastic Tube, available in 2.5m, 3.1m, 3.5 and 3.9m lengths, filled with an ANFO and aluminium mixture and traced with 10 grams/metre Detonating Cord through the centre of the tubular charge. The Detonating Cord is plastic coated (unreinforced) 10g/m.
Colour	Not available	Odour	Not available
Decomposition Temperature	Not available	Melting Point	Not available
Boiling Point	Not available	Solubility in Water	Soluble
Specific Gravity	0.75-0.85	pH	Not applicable
Vapour Pressure	Not available	Vapour Density (Air=1)	Not available
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	Not available	Flash Point	Not applicable
Auto-Ignition Temperature	Not applicable	Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable		

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Reacts with incompatible materials.

Conditions to Avoid

Heat, open flames and other sources of ignition. Shock, friction.

Incompatible materials

Store material in a well ventilated magazine suitably licensed for Class 1.1D Explosives. Avoid contact with 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 release of toxic and/or irritating fumes including oxides of nitrogen, carbon dioxide, carbon monoxide, nitric acid and ammonia.

Possibility of hazardous reactions

Highly reactive explosive. When detonated or heated to decomposition, this product will evolve highly toxic gases.

Hazardous Polymerization

Not available

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data is available for this product.

Ingestion

Ingestion of this product may irritate the gastric tract causing nausea and vomiting. Ingestion of large quantities may depress the central nervous system.

Inhalation

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

Due to product encapsulation no inhalation hazard is anticipated until product is detonated or heated to decomposition, evolving nitrogen oxides.

Skin

Prolonged or repeated skin contact with the contents of the packages may result in irritation. Pentaerythrite Tetranitrate can be absorbed through your skin, thereby increasing your exposure.

Eye

Causes serious eye irritation. On eye contact this product will cause tearing, stinging, blurred vision, and redness. Serious eye damage may result from explosive fragments.

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

Suspected of causing cancer. Classified as a suspected human carcinogen.

Diesel fuel, marine is listed as a Group 2B: Possibly carcinogenic to humans according to International Agency for Research on Cancer (IARC).

Diesel fuels, distillate (light) is listed as a Group 3: Not classifiable as to carcinogenicity to humans according to International Agency for Research on Cancer (IARC).

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

For Ammonium Nitrate:

Ammonium Nitrate was evaluated at 5, 10, 25 and 50mg (NH₄)/L. The fertility of *Daphnia magna* was decreased at 50 mg/L. Post embryonic growth of crustacea was impaired at 10, 25 and 50 mg/L.

40 hr LC₅₀ (*Aspergillus niger*): 15 mg/L (36°C).

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 licensed personnel. If necessary, the relevant Statutory Authorities must be notified.

Small quantities of damaged or deteriorated explosives may be destroyed by inclusion in a blast hole containing good explosives. For large quantities of damaged or deteriorated explosives notify manufacturer.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail:

This material is classified as Dangerous Goods Class 1 Explosives.

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 substances
- Division 5.2: Organic Peroxides
- Class 6: Toxic or Infectious Substances
- Class 7: Radioactive materials unless specifically exempted
- Class 8: Corrosive Substances
- Class 9: Miscellaneous substances
- 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

EmS: F-B,S-Y

UN-No: 0082

Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE B

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

Division: 1.1D

Proper Shipping Name: EXPLOSIVE, BLASTING, TYPE B

Packaging Instructions (cargo): Forbidden

Packaging Instructions (passenger): Forbidden

U.N. Number

0082

UN proper shipping name

EXPLOSIVE, BLASTING, TYPE B

Transport hazard class(es)

1.1D

Packing Group

see "Other information" (*)

Hazchem Code

E

IERG Number

02

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: July 2017

Supersedes: May 2012

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.

Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).

Globally Harmonised System of classification and labelling of chemicals.

Contact Person/Point

Dyno Nobel Asia Pacific Limited

Telephone: (07) 3026 3900

Fax: (07) 3026 3999

Emergency: 1800 098 836

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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