

SAFETY DATA SHEET

TROJAN CAST BOOSTERS

Infosafe No.: LPXZA
ISSUED Date : 05/03/2015
ISSUED by: Dyno Nobel Asia Pacific Pty
Limited

1. IDENTIFICATION

GHS Product Identifier

TROJAN CAST BOOSTERS

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

Cast Boosters.

Other Names

Name	Product Code
TROJAN NB UNIVERSAL	
TROJAN TWINPLEX	
TROJAN SPARTAN	
TROJAN STINGER	
TROJAN TWINPLEX B	
TROJAN RINGPRIME	

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

Acute Toxicity - Dermal: Category 3

Acute Toxicity - Inhalation: Category 3

Acute Toxicity - Oral: Category 3
STOT Repeated Exposure Category 2

Signal Word (s)

DANGER

Hazard Statement (s)

H201 Explosive; mass explosion hazard.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure

Pictogram (s)

Exploding bomb, Health hazard, Skull and crossbones



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.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311 Call a POISON CENTER or doctor/physician.
P330 Rinse mouth.
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P372 Explosion risk in case of fire.
P373 DO NOT fight fire when fire reaches explosives.
P370+P380 In case of fire: Evacuate area.

Precautionary statement – Storage

P401 Store in a cool, dry, well-ventilated area away from sources of ignition.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Precautionary statement – Disposal

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

Supplemental Information

Supplemental information

The information under this heading is not mandatory under WHS Regulations. It is provided as information on other GHS hazard classes and categories and/or environmental hazards that are outside the scope of the WHS Regulations.

GHS classification: Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2. Hazard statement: H411. Precautionary statement: P273,P391. Pictogram: Environmental.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Pentaerythritol tetranitrate (PETN)	78-11-5	<70 %
Trinitrotoluene	118-96-7	30-60 %
RDX	121-82-4	<60 %
Aluminium	7429-90-5	<15 %
HMX	2691-41-0	<10 %

4. FIRST-AID MEASURES

Inhalation

Avoid becoming a casualty - to protect rescuer, use air viva, oxy-viva or one way mask. Remove affected person from contaminated area - Apply artificial respiration if not breathing. Do not give direct mouth to mouth resuscitation. Resuscitate a in well ventilated area. Seek IMMEDIATE medical attention.

Unlikely route of exposure unless detonator is fired.

Ingestion

Do not induce vomiting. Immediately wash out mouth with water (never give anything by mouth if affected person is semi-conscious or unconscious). Seek immediate medical attention.

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

Unlikely route of exposure unless detonator is fired.

Skin

Remove all contaminated clothing immediately. Wash gently and thoroughly with water and non-abrasive soap for 15 minutes. Ensure contaminated clothing is washed before re-use or discard. Seek immediate medical attention.

Unlikely route of exposure unless detonator is fired.

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 and/or persist 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

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

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

Explosion risk in case of fire. Do not fight fire when fire reaches explosives. Evacuate area.

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

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.

Evacuate all unprotected personnel. Do not allow contact with skin and eyes. Do not breathe dust. It is essential to wear self-contained breathing apparatus (S.C.B.A) and full personal protective equipment and clothing to prevent exposure. Avoid exposure to spillage by sweeping up material avoiding dust generation or dampen spilled material with water to avoid airborne dust, then transfer material to suitable containers. Use absorbent paper dampened with water to pick up remaining material. Wash surfaces well with soap and water. Seal all wastes in labelled containers for subsequent recycling or disposal. 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

Toxic solid. Avoid exposure. Exposure without protection must be prevented. Wear appropriate personal protective equipment and clothing to prevent exposure. Use in designated areas with local exhaust ventilation. DO NOT store or use in confined spaces. Build up of dust/solid in the atmosphere must be prevented. Avoid breathing in solid / dust. Do not smoke. Maintain high standards of personal hygiene i.e. 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.

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

This material is toxic and must be stored, handled and maintained according to the appropriate regulations. Limit quantity in storage. Restrict access to storage area. Post appropriate warning signs. Keep storage area separate from populated work areas. Inspect periodically for deficiencies. Consider leak detection and alarm systems, as required. Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat and ignition sources. Store away from incompatible materials. Structural materials and lighting and ventilation systems in storage area should be corrosion resistant. Store cylinders upright on a level, fireproof floor, secured in position. Protect from damage. Keep cylinder valve cover on. Store full cylinders separately from empty ones. Label empty cylinders. 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/NZS 4452:1997 The storage and handling of toxic substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Trinitrotoluene
TWA: 0.5 mg/m³
NOTICES: Sk

RDX
TWA: 1.5 mg/m³
NOTICES: Sk

Aluminium
TWA: 10(metal dust) 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.

'Sk' Notice: Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

Biological Limit Values

No biological limits allocated.

Appropriate Engineering Controls

This substance is toxic and should be used with a local exhaust ventilation system, drawing solid / dust away from workers' breathing zone. Alternatively, a process enclosure system such as a fume cupboard should be employed. If the engineering controls are not sufficient to maintain concentrations of particulates below the exposure standards, 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 dust/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. 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

Properties	Description	Properties	Description
Appearance	Tan to brown solid. May also be silvery grey. Packaged in paper or plastic tubes.	Colour	Tan to brown solid. May also be silvery grey.
Odour	No odour	Decomposition Temperature	Not available
Melting Point	80°C (TNT)	Freezing Point	Not available
Boiling Point	Not available	Solubility in Water	<0.01%
Specific Gravity	Not available	pH	Not applicable
Vapour Pressure	0.042mm Hg at 80°C (TNT)	Vapour Density (Air=1)	Not applicable
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	Not available	Partition Coefficient: n-octanol/water	Not available
Density	1.55-1.65 g/cc	Flash Point	Not available
Flammability	Explosive solid - Eliminate all ignition sources.	Auto-Ignition Temperature	Not available
Explosion Limit - Upper	Not available	Explosion Limit - Lower	Not available

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions. May explode when subjected to fire, supersonic shock or high energy projectile impact, especially when confined or in large quantities.

Reactivity and Stability

Reacts with incompatible materials.

Conditions to Avoid

Keep away from heat, flame, friction, impact, ignition sources and strong shock.

Incompatible materials

Corrosives (Strong acids and bases or alkalis.)

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

Not available

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this material. The available acute toxicity data for the ingredient/s is/are given below.

Acute Toxicity - Oral

Pentaerythritol, tetranitrate: LD50(Rat): 1660 mg/kg

Trinitrotoluene : LD50(Rat): 795 mg/kg

RDX: LD50(Rat): 100 mg/kg

HMX: LD50(Rat): 6490 mg/kg

Acute Toxicity - Dermal

HMX: LD50(Rabbit): 630 mg/kg

Ingestion

Toxic if swallowed. Ingestion of this product may cause irritation to the mouth, throat, oesophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.

Inhalation

Toxic if inhaled. Inhalation may cause headaches, impairment of judgement and in extreme cases can lead to unconsciousness or death.

Skin

Toxic in contact with skin. Product can be absorbed through skin with resultant toxic systemic effects.

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.

Trinitrotoluene 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

May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard

Not expected to be an aspiration hazard.

Other Information

Prolonged or repeated contact may cause cataracts, optic neuritis, blurred vision or amblyopia. Prolonged skin contact may cause irritation, severe eczema and allergic dermatitis. Repeated overexposure may result in chest pains.

TNT is an irritant, neurotoxin, hepatotoxin, nephrotoxin and bone marrow depressant. Acute or chronic exposure to TNT may cause sensitization dermatitis, headache, dizziness, jaundice, lethargy, liver or blood problems such as toxic nephritis, aplastic anemia, hemolytic anemia or methemoglobin formation.

Pentaerythritol, tetranitrate (PETN) is a known coronary vasodilator. Ingestion or inhalation may result in a lowering of blood pressure, headache or faintness, and a decreased tolerance for grain alcohol.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Persistence and degradability

Not available

Mobility

Not available

Bioaccumulative Potential

Not available

Other Adverse Effects

Not available

Environmental Protection

Prevent this material entering waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Dispose of waste according to applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations.

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.

In all circumstances, detonation is the preferred method of disposal. Do not burn, ask Dyno Nobel for advice and assistance.

The residue from spills and the burning of explosives may be toxic to livestock and/or wildlife.

DETONATION:

The explosives to be destroyed must be placed in direct contact with fresh priming charge in a hole which is at least 0.6 m deep 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: 0042

Proper Shipping Name: BOOSTERS without detonator
EMS : F-B,S-X

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.

Class/Division: 1.1D

UN No: 0042

Proper Shipping Name: Boosters without detonator

Packaging Instructions (passenger & cargo): Forbidden

Packaging Instructions (cargo only): Forbidden

U.N. Number

0042

UN proper shipping name

BOOSTERS

Transport hazard class(es)

1.1D

Packing Group

see 'Other information' (*)

Hazchem Code

E

EPG Number

EXP1

IERG Number

02

IMDG Marine pollutant

Yes

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 amendment: May 2018

1. Identification

SDS Reviewed: March 2015

Supersedes: July 2010

Supersedes: January 2009

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

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.

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.

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END OF SDS

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