Material Safety Data Sheet

Infosafe No. LPWDE	Issue Date : May 2007	ISSUED by DYNONOB

Product Name : **HDP 150 AND 400 BOOSTERS**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	HDP 150 AND 400 BOOSTERS
Company Name	Dyno Nobel Asia Pacific Limited
Address	Level 20, 111 Pacific Highway North Sydney NSW 2060
Emergency Tel.	1800 098 836
Telephone/Fax Number	Tel: +61 2 9968 9000 Fax: +61 2 9964 0170
Recommended Use	Initiating explosive charges.

Other Names

Name	Product Code
HDP 120	
HDP 150	
HDP 400	
HDP 450	
HDP 900	
HDP NDS Booster	
HDP Cast Booster	
Ringprime®	
Doubledet®	
Gold Nugget	

Additional Information Note: This substance is an explosive product classified Class 1.1D Dangerous Good

2. HAZARDS IDENTIFICATION

Hazard Classification Classified as Hazardous, according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC).
Classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Risk Phrase(s)
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
R33 Danger of cumulative effects.
R53 May cause long term adverse effects in the aquatic environment.

Safety Phrase(s)
S34 Avoid shock and friction.
S35 This material and its container must be disposed of in a safe way.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell seek medical advice immediately
S53 Avoid exposure - obtain special instructions before use.
S61 Avoid release to the environment. Refer to special instructions/safety data sheet.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Pentaeruthritol tetranitrate (PETN)	78-11-5	30-70 %
Trinitrotoluene	118-96-7	30-70 %
Sodium Nitrate	7631-99-4	0-10 %
Inert fillers	-	0-10 %

4. FIRST AID MEASURES

Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Seek immediate medical attention
Ingestion	Unlikely to occur due to the physical state of the product. However, if ingested, Do NOT induce vomiting. Wash out mouth with water. Seek immediate medical attention.
Skin	Immediately wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. Can be absorbed through the skin with resultant toxic effects. Seek immediate medical advice.
Eye	If contact with the eye(s) occurs, wash with copious amounts of water holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. If symptoms persist seek medical attention.
First Aid Facilities	Eye wash fountain, safety shower and normal washroom facilities.
Advice to Doctor	Treat symptomatically.

5. FIRE FIGHTING MEASURES

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 will emit toxic and/or irritating fumes including carbon monoxide and carbon dioxide.
Special Protective Equipment for fire fighters	Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Use water spray to disperse vapours.
Specific Hazards	Will explode if suitably primed. Avoid extreme conditions of heat or shock. DO NOT FIGHT ANY FIRES. In the cases of a fire, if explosive is burning, immediately isolate area and evacuate personnel to a safe distance. Evacuate up wind as toxic fumes may be generated as the product decomposes.
Hazchem Code	E

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures	Shut off all possible ignition sources. Isolate and install signals for the area of spill. Contain the source and spread of the spill and ensure that the material does not enter any waterways or drains. Collect with anti-spark tools and place in clean, approved containers which are then labelled and sealed. Surplus or defective explosives must not be placed in any waterway, thrown away, discarded or placed with rubbish.

7. HANDLING AND STORAGE

Precautions for Safe Handling	Use smallest possible amounts in designated areas with adequate ventilation. Avoid sources of shock, friction, heat and ignition. Avoid contact with oxidising materials. Have emergency equipment (for fires, 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. It is essential that all who come into contact with this material maintain high standards of personal hygiene ie. Washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for Safe Storage	Store in a cool, dry, well ventilated magazine licensed for Class 1.1D Explosives. Keep storage area free of sources of shock, friction, heat, ignition and combustible materials. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Always keep in containers made of the same material as the supply container. 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. Reference should be made to AS 2187.1-1998 Explosives - Storage, transport and use - Storage. Reference should also be made to all State and Federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure standards have been established for this material by the National Occupational Health And Safety Commission (NOHSC). However, exposure standards for ingredients are stated below:

Substance	STEL		TWA	
	ppm	mg/m³	ppm	mg/m³
Trinitrotoluene	-	-		0.5 (Sk)

TWA - the Time-Weighted Average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.
'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 limit available.

Engineering Controls

Ensure sufficient ventilation to keep airborne concentrations below exposure limits. Mechanical exhaust ventilation may be required.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then respiratory protective equipment should be used suitable for protecting against airborne contaminants. 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(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. 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

Appearance	Roughly cylindrical shapes. Cardboard or plastic outer sleeve containing white to pale yellow explosive charge.
Solubility in Water	Insoluble in water.
Specific Gravity	1.62
Flammability	Explosive solid - Eliminate all ignition sources.

10. STABILITY AND REACTIVITY

Stability and Reactivity	Detonation can occur from impact, friction and excessive heating.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Avoid sources of heat and shock to the product.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	NO LD50 data available for the actual product. Oral LD50 (rat) : 795 mg/kg (TNT). Oral LD50 (rat) : 35 500 mg/kg (PETN). For TNT, dermatitis, cyanosis, gastritis, liver damage and aplastic anaemia are commonly quoted effects of exposure. Other occasional effects include blood destruction, leucocytosis or leucopoenia, central nervous system effects, peripheral neuritis and muscular pain, cardiac muscular and menstrual irregularities and urinary and renal Cataracts in the eyes have been reported following chronic exposure. PETN is a vasodilatory agent therefore can cause lowering of blood pressure. Exposure to high doses of PETN may result in headaches, weakness and dizziness.
Inhalation	Toxic by inhalation. Inhalation of high concentrations of this product will result in headache, dizziness, mental depression, nausea, vomiting, narcosis, anaesthesia and coma.
Ingestion	Toxic if swallowed. Will cause irritation to the mouth, esophagus and stomach. Symptoms may include nausea, headaches, dizziness, vomiting, abdominal pains, chemical burns to the gastro-intestinal tract with resultant bleeding, and possible shock. Damage to the liver, kidney and renal failure may also occur.
Skin	Toxic if absorbed through the skin. Contact with liquid may cause blisters which appear after several hours with little or no pain. Skin resembles second degree burns. May cause toxic and allergic dermatitis.
Eye	Dust or particulate matter may be an eye irritant.
Chronic Effects	Prolonged or repeated skin contact may cause defatting leading to dermatitis. Evidence from human exposure data and animal tests is available to indicate that repeated or prolonged exposure to the TNT contained in this material (by any route) could result in liver, blood, bone marrow, eye kidney and nervous system disorders. The ingestion of alcohol may increase susceptibility of the effects of TNT.

12. ECOLOGICAL INFORMATION

Ecotoxicity	May cause long term adverse effects in the aquatic environment.
Persistence / Degradability	No data available for this specific product.
Mobility	No data available for this specific product.
Environ. 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. If necessary, the relevant statutory authorities must be notified. In all circumstances, detonation is the preferred method 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 (Explosive) Dangerous Good according to The Australian Code for the Transport of Dangerous Goods by Road and Rail. Dangerous goods of Class 1 (Explosive) are incompatible in a placard load with any of the following: - Class 2.1, Flammable Gas - Class 2.2, Non-flammable Non-toxic Gas - Class 2.3, Toxic Gas - Class 3, Flammable Liquid - Class 4.1, Flammable Solid - Class 4.2, Spontaneously Combustible Substance - Class 4.3, Dangerous When Wet Substance - Class 5.1, Oxidising Agent - Class 5.2, Organic Peroxide - Class 6, Toxic and Infectious Substances - Class 7, Radioactive Substance - Class 8, Corrosive - Class 9 - Miscellaneous Dangerous Goods - Fire risk substances
U.N. Number	0042
Proper Shipping Name	BOOSTERS
DG Class	1.1D
Hazchem Code	E
Packaging Method	E107
Packing Group	see 'Other information' (*)
EPG Number	EXP1
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

Poisons Schedule	Not Scheduled
Hazard Category	Toxic,Explosive

16. OTHER INFORMATION

Date of preparation or last revision of MSDS MSDS created: May 2007

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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