

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

Product Name : **DYNOSPLIT®**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name DYNOSPLIT®
Company Name Dyno Nobel Asia Pacific Limited
Address Level 20, 111 Pacific Highway North Sydney
NSW 2060
Emergency Tel. 1800 098 836
Telephone/Fax Tel: +61 2 9968 9000
Number Fax: +61 2 9964 0170
Recommended Use Blasting (pre-splitting) explosive

2. HAZARDS IDENTIFICATION

Hazard Classification Not 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) R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.

Safety Phrase(s) S34 Avoid shock and friction.
S35 This material and its container must be disposed of in a safe way.

Other Information Prolonged exposure to decomposition products may result in respiratory difficulties and possibly severe toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Information on Composition	Ingredient Name	CAS	Proportion
	Ammonium nitrate	6484-52-2	30.00 - 60.00%
	Monomethylamine Nitrate	-	10.00 - 30.00%
	Water	7732-18-5	10.00 - 30.00%
	Aluminium	7429-90-5	0.00 - 10.00%
	Oxidising substances	-	0.00 - 10.00%
	Ingredients determined not to be hazardous	Not required	0.00 - 10.00%
	Thiourea	62-56-6	0.00 - 0.50%

PETN (pentaerythritol tetranitrate) is added as 5 g/m detonating cord.

MMAN is a combination of 24% water, 25% methylamine (CAS 74-89-5) and 51% nitric acid (CAS 7697-37-2).

Note: That there are two possible compositions for this product.

Alternative Composition:

Ingredient Name	CAS	Proportion
Ammonium nitrate	6484-52-2	30.00 - 60.00%
Sodium Nitrate	7631-99-4	10.00 - 30.00%
Nitric Acid*	7697-37-2	< 10.00%
Sodium Perchlorate	7601-89-0	< 10.00%
Aluminium Powder	7429-90-5	< 10.00%
Hexamine*	100-97-0	10.00 - 30.00%
Ingredients determined not to be hazardous		to 100.00%

* Hexamine and Nitric Acid react to form Hexamine Nitrate.

Other Information Note: Remainder of ingredients determined not to be hazardous.

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4. FIRST AID MEASURES

Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. If symptoms develop seek medical attention.
Ingestion	DO NOT INDUCE VOMITING. Wash out mouth with water. Where vomiting occurs naturally have victim place head below hip level in order to reduce risk of aspiration. Seek immediate medical attention.
Skin	Wash affected area extremely thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. Obtain medical attention if blistering occurs or redness persists.
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.
Advice to Doctor	Treat symptomatically.
Other Information	If decomposition products are inhaled remove to fresh air. Allow patient to assume most comfortable position. Keep at rest until fully recovered. If not breathing, administer artificial respiration. If breathing is difficult, give oxygen. Call a physician.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	If the product ignites then mass cooling by heavy dousing with water should effectively extinguish small fires.
Hazards from Combustion Products	Under fire conditions this product may emit toxic and/or irritating fumes including carbon monoxide and carbon dioxide.
Specific Hazards	Dangerous when exposed to heat or flames. Can support combustion of other materials involved in fire and is capable of undergoing detonation if heated to high temperatures especially under any confinement including being piled on itself in a burning fire. When heated to decomposition, highly toxic fumes may be emitted. DO NOT FIGHT LARGE FIRES. If a fire becomes established immediately isolate area and evacuate personnel to at least 1600 metres - do not return until smoke and fumes have dissipated.
Hazchem Code	E
Precautions in connection with Fire	DO NOT FIGHT EXPLOSIVES FIRES. Try to keep fire from reaching explosives. Isolate area and evacuate personnel to a safe place.
Other Information	Explosives should not be abandoned at any location for any reason. Do not handle during electrical storms.

6. ACCIDENTAL RELEASE MEASURES

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Emergency Procedures If material is spilled or released, isolate the area, eliminate ALL sources of ignition, avoid skin contact and remove soiled clothing. Contain the source and spread of the spill and ensure that the material does not enter any waterways or drains.

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.

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.

Additional information on precautions for use Use of this product by persons lacking adequate training, experience and supervision may result in injury or death. Obey all Commonwealth, State and Local laws and regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure standards have been established for this material, however, the TWA National Occupational Health And Safety Commission (NOHSC) exposure standards for dust not otherwise specified is 10 mg/m³.

Biological Limit Values No Biological limit available.

Engineering Controls Ensure sufficient ventilation to keep airborne concentrations below exposure limits. All personnel should be removed to a safe location and protected from air blast and fly rock during blasting.

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

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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	Continuous string of plastic wrapped material with 5 g/m detonating cord running through the centre of the entire length. When package is perforated, exposed product appears as a silver foamed gel.
Odour	Not available
Freezing Point	Not available
Boiling Point	Not available
Solubility in Water	Insoluble in water.
Specific Gravity	1.05 - 1.15
pH Value	4.5 - 6.0
Vapour Pressure	Not available
Vapour Density (Air=1)	Not available
Flash Point	Not available
Flammability	Explosive. Eliminate all ignition sources.
Auto-Ignition Temperature	Not available
Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available

10. STABILITY AND REACTIVITY

Conditions to Avoid	Avoid sources of heat and combustible materials.
Incompatible Materials	Avoid contact with other explosives, 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 the release of toxic and/or irritating fumes including ammonia and oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No toxicity data available for this product.
Inhalation	Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

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Ingestion	Ingestion of this product may irritate the gastric tract causing nausea and vomiting.
Skin	May cause redness, itching and irritation.
Eye	May cause eye irritation, tearing, stinging, blurred vision, and redness.
Chronic Effects	Prolonged or repeated skin contact may cause defatting leading to dermatitis.

12. ECOLOGICAL INFORMATION

Ecotoxicity	No data available for this specific product.
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

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Product Name : **DYNOSPLIT®****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**DYNO**
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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 0241

Proper Shipping Name EXPLOSIVE, BLASTING, TYPE E

DG Class 1.1D

Hazchem Code E

Packaging Method E8

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 Explosive

16. OTHER INFORMATION

Date of preparation or MSDS reviewed: May 2007

last revision of MSDS

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Material Safety Data Sheet

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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.

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. Dyno Nobel Asia Pacific Limited is not responsible for damages of any nature resulting from the use of its products or reliance upon the information. Dyno Nobel Asia Pacific Limited makes no express or implied warranties other than those implied mandatory by Commonwealth, State or Territory legislation.

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