

SAFETY DATA SHEET

DYNO[®]
Dyno Nobel

ELECTRONIC DETONATORS

Infosafe No.: LPUZJ
ISSUED Date : 24/01/2019
ISSUED by: Dyno Nobel Asia Pacific Pty
Limited

1. IDENTIFICATION

GHS Product Identifier

ELECTRONIC DETONATORS

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

A precision initiation system for explosive charges used in commercial mining.

Other Names

Name	Product Code
SMARTSHOT [®] ELECTRONIC DETONATOR	
QUICKSHOT [®] ELECTRONIC DETONATOR	
DIGISHOT [®] ELECTRONIC DETONATOR	
DIGISHOT [®] PLUS ELECTRONIC DETONATOR	
HOTSHOT [®] ELECTRONIC DETONATOR	
DRIFTSHOT [®] STARTER	
DRIFTSHOT [™] ELECTRONIC DETONATOR	
GEOSHOT [™] ELECTRONIC DETONATOR	
DIGISHOT [®] PLUS.4G ELECTRONIC DETONATOR	

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 1.4

Signal Word (s)

WARNING

Hazard Statement (s)

H204 Fire or projection 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 regulations.

Precautionary statement – Disposal

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

Other Information

This is a packaged product that will not result in exposure to the explosive material under normal conditions of use. Exposure concerns are primarily with post-detonation reaction products. If released, contents of package will be hazardous.

Additional information:

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

Can become highly flammable in use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Lead azide	13424-46-9	(Packaged product (article))
Pentaerythritol tetranitrate	78-11-5	(Packaged product (article))
Cellulose, nitrate	9004-70-0	(Packaged product (article))
Diazodinitrophenol (DDNP)	4682-03-5	(Packaged product (article))
Ingredients determined not to be hazardous		Balance to 100%

4. FIRST-AID MEASURES

Inhalation

Unlikely route of exposure unless detonator is fired. If detonation fumes are inhaled, move the affected person to fresh air. Ensure airways are clear and give oxygen if breathing is difficult. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion

Unlikely route of exposure unless detonator is fired. If ingested, do not induce vomiting. Rinse mouth with water. Seek medical attention.

Skin

Unlikely route of exposure unless detonator is fired. Treat for high velocity trauma, stop bleeding and seek IMMEDIATE medical attention.

Eye contact

Unlikely route of exposure unless detonator is fired. Seek IMMEDIATE medical attention.

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 (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

Toxic fumes of lead will be produced if detonation occurs. Evacuate upwind of fire.

Specific Hazards Arising From The Chemical

Extreme risk of explosion by shock, friction, fire or other sources of ignition. In case of all fires involving detonators, evacuate the area immediately. DO NOT FIGHT FIRES.

Hazchem Code

1YE

Decomposition Temperature

100°C

Precautions in connection with Fire

Do not attempt to fight fires involving explosive materials. Evacuate all personnel to a predetermined safe, distant location. Allow fire to burn unless it can be fought remotely or with fixed extinguishing systems (sprinklers).

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Protect from all ignition sources. In case of fire evacuate all personnel to a safe distant area and allow to burn or fight fire remotely. 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.

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. 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, including any incompatibilities

Store in cool, dry, well-ventilated location. Only properly qualified and authorised personnel should handle and use explosives. Store in a well-ventilated, clean, dry magazine. 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 as it is very reactive and any contamination is potentially hazardous. For information on the design of the storeroom, reference should be made to Australian Standard AS 2187 Explosives - Storage, transport and use.

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:

Lead, inorganic dusts & fumes (as Pb)

TWA: 0.05 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.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Source: Safe Work Australia

Biological Limit Values

Name: Lead and Inorganic compounds

Determinant: Lead in blood

Value: 200 µg/L

Sampling time: Not critical

Source: American Conference of Industrial Hygienists (ACGIH).

Appropriate Engineering Controls

Use in a well ventilated area. Provide enhanced ventilation after use if in underground mines or other enclosed area.

Respiratory Protection

Not required under normal conditions. Where exposure to fumes from blasting exists and ventilation is inadequate an approved respirator should be used. 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, 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 (series) - 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. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable work wear should be worn to protect personal clothing, eg cotton overalls buttoned at neck and wrist. When large quantities are handled the use of plastic aprons and rubber boots is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Appearance	A copper detonator comprising a yellow, green, orange or red wiring harness fitted with a pair of connectors. There may be printed on the side of the body, the words DANGER EXPLOSIVE in black.	Colour	Various
Odour	Not available	Decomposition Temperature	100°C
Melting Point	Not applicable	Boiling Point	Not applicable
Solubility in Water	Not applicable	Specific Gravity	Not applicable
pH	Not applicable	Vapour Pressure	Not applicable
Vapour Density (Air=1)	Not applicable	Odour Threshold	Not applicable
Viscosity	Not applicable	Partition Coefficient: n-octanol/water	Not applicable
Flash Point	Not applicable	Flammability	Not flammable
Auto-Ignition Temperature	100°C	Flammable Limits - Lower	Not applicable
Flammable Limits - Upper	Not applicable	Explosion Properties	Not available
Oxidising Properties	Not applicable		

10. STABILITY AND REACTIVITY

Reactivity

Reacts with incompatibles.

Chemical Stability

Contains explosive material. Do not expose to temperatures higher than 100°C.

Conditions to Avoid

Keep away from heat, flame, ignition sources, impact, friction, electrostatic discharges and strong shock. Do not attempt to disassemble.

Incompatible materials

Not available

Hazardous Decomposition Products

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

Possibility of hazardous reactions

Heat, flames, other ignition sources, impact, friction, electrostatic discharges and strong shock may cause explosion.

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this material. This is a packaged product that will not result in exposure to the explosive material under normal conditions of use. Exposure concerns are primarily with post-detonation reaction products. If released, contents of package will be hazardous.

Ingestion

Ingestion of post-detonation reaction product residue may irritate the gastric tract causing nausea and vomiting. Keep under observation for possible lead poisoning.

Inhalation

Inhalation of lead dust and fumes may cause irritation of the nose, throat and respiratory system and systemic effects.

Skin

Exposure to post-detonation reaction products may cause irritation.

Eye

When explosion occurs, may cause permanent eye damage or blindness. Dusts and fumes from firing may cause eye irritation resulting in redness, swelling, 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.

Lead compounds, inorganic is listed as a Group 2A: Probably carcinogenic to humans according to International Agency for Research on Cancer (IARC).

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

Reproductive Toxicity

Not considered to be toxic to reproduction.

Lead:

May damage fertility or the unborn child. Classified as a Known or presumed human reproductive or developmental toxicant.

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.

Other Information

Repeated inhalation or ingestion of post-detonation reaction products may lead to systemic effects such as respiratory tract irritation, ringing of the ears, dizziness, elevated blood pressure, blurred vision and tremours. Heavy metal (lead) poisoning can occur. Danger of cumulative effects. Repeated exposure may cause lead to accumulate in the body. It can take years for the body to get rid of excess lead. High or repeated exposure may damage the nerves causing weakness, "pins and needles," and poor coordination in arms and legs.

12. ECOLOGICAL INFORMATION

Ecotoxicity

If contents are released into the environment, they will be harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Not readily biodegradable

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 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.

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: 1.4B

EmS: F-B,S-X

UN-No: 0255

Proper Shipping Name: DETONATORS, ELECTRIC

Special provisions: 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.

Division: 1.4B

UN-No: 0255

Hazard Labels: Explosive 1.4

Proper Shipping Name: DETONATORS, ELECTRIC

Packaging Instructions (cargo only): 131

Packaging Instructions (passenger & cargo): Forbidden

Special instructions: A802

U.N. Number

0255

UN proper shipping name

DETONATORS, ELECTRIC

Transport hazard class(es)

1.4B

Packing Group

see "Other information" (*)

Hazchem Code

1YE

IERG Number

03

IMDG Marine pollutant

No

Transport in Bulk

Not available

Special Precautions for User

Not available

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: January 2019

Supersedes: January 2014

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.

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END OF SDS

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