

# SAFETY DATA SHEET

Date of Issue: June 2017

Issued By: Exploenergy Australia

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Product Name: **ELECTRONIC DETONATORS**

## AUTONET ELECTRONIC DETONATOR

### 1. IDENTIFICATION

<b>GHS Product Identifier</b>	ELECTRONIC DETONATORS
<b>Company Name</b>	Importer: Exploenergy Australia Pty Ltd Manufacturer: WUXI ETEK MICROELECTRONICS CO.,LTD.
<b>Address</b>	Importer: 24 Egerton Street SILVERWATER NSW 2128 Australia Manufacturer: No.8 Xin Hui Huan Road, New District, Wuxi,China
<b>Telephone/Fax Number</b>	Importer: Tel: +61 2 97379028 Fax: +61 2 97379031 Manufacturer: Tel: +86-510-8521 0118 Fax: +86-510-8029 7981
<b>Emergency Phone Number</b>	Primary: Exploenergy Australia Pty Ltd +61 2 97379028 Secondary: WUXI ETEK Microeletronics Co. Ltd +86 510 8029 7988
<b>Recommended use of the chemical and restrictions on use</b>	Precision initiating system for explosives charges used in mining, quarrying and construction
<b>Other Names (Proper Shipping Name)</b>	DETONATORS, ELECTRIC for blasting
<b>Additional Information</b>	This substance is an explosive product classified as UN DG Class 1.4S dangerous goods

### 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) and Australian Work, Health and Safety regulations.

Classified as dangerous goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7<sup>th</sup> Edition.


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Explosives:	Division 1.4
Acute Toxicity – Inhalation:	Category 4
Acute Toxicity – Oral:	Category 4

<b>Signal Word (s)</b>	Warning
<b>Hazard Statement (s)</b>	H204 Fire or projection hazard
<b>General Precautionary Statement (s)</b>	P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P103 Read label before use.
<b>Pictogram (s)</b>	Exploding bomb 
<b>Precautionary statement – Prevention</b>	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. 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.
<b>Precautionary statement – Response</b>	P308+P313 IF exposed or concerned: Get medical advice/ attention. P370+P380 In case of fire: Evacuate area. P374 Fight fire with normal precautions from a reasonable distance.
<b>Precautionary statement – Storage</b>	P401 Store in accordance with regulations. P405 Store locked up.
<b>Precautionary statement – Disposal</b>	P501 Dispose of contents/container in accordance with regulations.
<b>Other Information</b>	This is a packaged product that will not result in exposure to the explosive material under normal conditions of use.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

	Name	CAS	Proportion
<b>Ingredients</b>	Hexahydrotrinitrotriazine (RDX)	121-82-4	High >70%
	Diazodinitrophenol (DDNP)	87-31-0	Low <30%

## 4. FIRST-AID MEASURES

<b>Inhalation</b>	Unlikely route of exposure unless detonator is fired. If detonation fumes are inhaled, move the affected person to fresh air. Ensure airways are
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	clear and give oxygen if breathing is difficult. Apply artificial respiration if not breathing. Seek medical attention.
<b>Ingestion</b>	Unlikely route of exposure unless detonator is fired. If ingested, do not induce vomiting. Rinse mouth with water. Seek medical attention.
<b>Skin</b>	Unlikely route of exposure unless detonator is fired. Treat for high velocity trauma, stop bleeding and seek IMMEDIATE medical attention.
<b>Eye contact</b>	Unlikely route of exposure unless detonator is fired. Seek IMMEDIATE medical attention.
<b>First Aid Facilities</b>	Eye wash and normal washroom facilities. P280 Wear protective gloves/protective clothing/eye protection/face protection.
<b>Advice to Doctor</b>	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	Use remote or fixed extinguishing systems (sprinklers).
<b>Hazards from Combustion Products</b>	Toxic fumes of nitrogen will be released. Evacuate upwind of fire.
<b>Specific hazards arising from the chemical</b>	Risk of explosion by shock, friction, fire or other sources of ignition. In case of all fires involving detonators, evacuate the area immediately. Fight fire with normal precautions from a reasonable distance.
<b>Hazchem Code</b>	1YE
<b>Decomposition Temp.</b>	100°C
<b>Precautions in connection with Fire</b>	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

<b>Personal precautions, protective equipment and emergency procedures</b>	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.
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## 7. HANDLING AND STORAGE

<b>Precautions for Safe Handling</b>	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.
<b>Conditions for safe storage, including any incompatibilities</b>	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. 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

<b>Occupational exposure limit values</b>	No exposure standards have been established for this material, however, the TWA Safe Work Australia exposure standards for dust not otherwise specified is 10 mg/m <sup>3</sup> .
<b>Biological Limit Values</b>	No biological limit allocated.
<b>Appropriate engineering controls</b>	Use in a well ventilated area. Provide enhanced ventilation after use if in underground mines or other enclosed area.
<b>Respiratory Protection</b>	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.
<b>Eye Protection</b>	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

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	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.
<b>Hand Protection</b>	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.
<b>Body Protection</b>	Suitable work wear should be worn to protect personal clothing, eg. cotton overalls buttoned at neck and wrist.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	A steel detonator comprising a wiring harness fitted with a connector block. The words DANGER EXPLOSIVE are laser etched into the body of the detonator.
<b>Odour</b>	Not available
<b>Decomposition Temperature</b>	>100°C
<b>Melting Point</b>	Not applicable
<b>Boiling Point</b>	Not applicable
<b>Solubility in Water</b>	Not applicable
<b>Specific Gravity</b>	Not applicable
<b>pH</b>	Not applicable
<b>Vapour Pressure</b>	Not applicable
<b>Vapour Density (Air=1)</b>	Not applicable
<b>Odour Threshold</b>	Not applicable
<b>Viscosity</b>	Not applicable
<b>Partition Coefficient: n-octanol/water</b>	Not applicable
<b>Flash Point</b>	Not applicable
<b>Flammability</b>	Not flammable
<b>Auto-Ignition Temperature</b>	>100°C
<b>Flammable Limits – Lower</b>	Not applicable
<b>Flammable Limits - Upper</b>	Not applicable
<b>Explosion Properties</b>	Not available
<b>Oxidising Properties</b>	Not applicable

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Reacts with incompatibles.
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<b>Chemical Stability</b>	Conditions contributing to instability – excessive heat, cold, static electricity, lightning
<b>Conditions to Avoid</b>	May explode at elevated temperatures (above 70°C), from friction or impact, or by electrical energy from an extraneous source (lightning, static electricity, stray currents, galvanic electricity or electromagnetic radiation).
<b>Incompatible Materials</b>	This product is incompatible with acids and alkalis.
<b>Decomposition Products</b>	Produces shrapnel. Hazardous gases produced may include silica, carbon monoxide and nitrogen oxides.
<b>Possibility of Hazardous Reactions</b>	Not applicable
<b>Hazardous Polymerisation</b>	Not applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicology Information</b>	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.
<b>Ingestion</b>	Ingestion of post-detonation reaction product residue may irritate the gastric tract causing nausea and vomiting.
<b>Inhalation</b>	Inhalation of dust and fumes may cause irritation of the nose, throat and respiratory system and systemic effects.
<b>Skin</b>	Exposure to post-detonation reaction products may cause irritation
<b>Eye</b>	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.
<b>Respiratory Sensitisation</b>	Not expected to be a respiratory sensitiser.
<b>Skin Sensitisation</b>	Not expected to be a skin sensitiser.
<b>Germ Cell Mutagenicity</b>	Not considered to be a mutagenic hazard.
<b>Carcinogenicity</b>	Not considered to be a carcinogenic hazard.
<b>Reproductive Toxicity</b>	Not applicable
<b>STOT - single exposure</b>	Not expected to cause toxicity to a specific target organ.
<b>STOT – repeated exposure</b>	Not expected to cause toxicity to a specific target organ.
<b>Aspiration Hazard</b>	Not expected to be an aspiration hazard.
<b>Other Information</b>	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 tremors.

## 12. ECOLOGICAL INFORMATION

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<b>Ecotoxicity</b>	If contents are released into the environment, they will be harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<b>Persistence and degradability</b>	Not readily biodegradable
<b>Mobility</b>	Not available
<b>Bioaccumulative Potential</b>	Not available
<b>Environmental Protection</b>	Avoid contaminating waterways. Do not discharge this material into waterways, drains and sewers.

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal Considerations</b>	<p>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.</p> <p>NOTE: Detonations in loose or stony ground may be expected to cause fly rock.</p>
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## 14. TRANSPORT INFORMATION

<b>Transport Information</b>	<p>Road and Rail: 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).</p> <p>Class 1 Dangerous Goods are incompatible in a placard load with any of the following:</p> <ul style="list-style-type: none"><li>- Division 2.1, Flammable Gases</li><li>- Division 2.2, Non-flammable Non-toxic Gases</li><li>- Division 2.3, Toxic Gases</li><li>- Class 3, Flammable Liquids</li><li>- Division 4.1, Flammable Solids</li><li>- Division 4.2, Spontaneously Combustible Substances</li><li>- Division 4.3, Dangerous When Wet Substances</li><li>- Division 5.1, Oxidising Agents</li><li>- Division 5.2, Organic Peroxides</li><li>- Class 6, Toxic and Infectious Substances</li><li>- Class 7, Radioactive Substances</li><li>- Class 8, Corrosive Substances</li></ul>
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	<p>- Class 9 - Miscellaneous Dangerous Goods - Fire risk substances</p> <p>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: 1.4S EmS: F-B,S-X UN-No: 0456 Proper Shipping Name: DETONATOR ASSEMBLIES, ELECTRIC for blasting Special provisions: None</p> <p>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: 1.4S UN-No: 0456 Proper Shipping Name: DETONATOR ASSEMBLIES, ELECTRIC for blasting Packaging Instructions (cargo only): 131 Packaging Instructions (passenger &amp; cargo): A165 Special instructions: A165</p>
<b>UN Number</b>	0456
<b>UN Proper Shipping Name</b>	DETONATOR ASSEMBLIES, ELECTRIC for blasting
<b>Transport Hazard Class(es)</b>	1.4S
<b>Hazchem Code</b>	1YE
<b>Packing Group</b>	See "Other Information" (*)
<b>IMDG Marine Pollutant</b>	No
<b>Other Information</b>	<p>(*) 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 the Australian Explosives Code.</p>

## 15. REGULATORY INFORMATION

<b>Regulatory Information</b>	<p>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)</p>
<b>Poisons Schedule</b>	Not Scheduled



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## 16. OTHER INFORMATION

<b>Date of preparation or last revision of SDS</b>	SDS Reviewed: June 2017 Supersedes: Not applicable
<b>Literature References</b>	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.
<b>Contact Person/Point</b>	Exploenergy Australia Pty Ltd Telephone: +61 2 9737 9028 Fax: +61 2 97379031
<b>Disclaimer</b>	<p>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.</p> <p>While Exploenergy Australia Pty Ltd 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 Exploenergy Australia Pty Ltd'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.</p> <p>Exploenergy Australia Pty Ltd is not responsible for damages of any nature resulting from the use of its products or reliance upon the information. Exploenergy Australia Pty Ltd makes no express or implied warranties other than those implied and mandatory by Commonwealth, State or Territory legislation.</p>