Material Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **EXEL DETONATORS (1.1B PACKAGING)**

Recommended Use: Initiating system for explosive charges. The detonator assemblies consist of a length of plastic signal tube with an aluminium tube (detonator) at one end or both ends. The aluminium tube may be enclosed in a plastic connecting piece. The other end of the plastic tubing has a plastic connector which may also enclose a closed aluminium tube. The plastic tubing is coiled and may be coiled on a reel. The signal tube has an internal dusting of HMX and aluminium powder. The detonator has a lead azide and PETN charge. It also contains a pyrotechnic delay element.

Supplier: Orica Australia Pty Ltd
ABN: 004 117 828
Street Address: 1 Nicholson Street
Melbourne 3000
Australia
Telephone Number: +61 3 9665 7111
Facsimile: +61 3 9665 7937

Emergency Telephone: **1 800 033 111 (ALL HOURS)**

2. HAZARDS IDENTIFICATION

Based on available information, not classified as hazardous according to criteria of ASCC; NON-HAZARDOUS SUBSTANCE.

Classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail; DANGEROUS GOODS.

Poisons Schedule: None allocated.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components / CAS Number	Proportion	Risk Phrases
Aluminium 7429-90-5	<1%	R10, R15
Cyclotetramethylenetetranitramine (HMX) 2691-41-0	<1%	R3 R 20/21/22
Pentaerythritol tetranitrate (PETN) 78-11-5	<1%	R3
Lead azide 13424-46-9	<1%	R3,R20/22,R33,R61(1),R62(3), R50/53

Metal and plastic components >60% -
-

4. FIRST AID MEASURES

Construction of the product normally prevents contact with explosive component, however, in the event of exposure:

Inhalation: Remove victim from area of exposure - avoid becoming a casualty. Seek medical advice if effects persist.

Skin Contact: If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

Eye Contact: If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Ingestion: Rinse mouth with water. If swallowed, give a glass of water to drink. If vomiting occurs give further water. Seek medical assistance.

Medical attention and special treatment: Treat symptomatically. Explosive material.

5. FIRE FIGHTING MEASURES

Hazards from combustion products: Explosive material. Avoid all ignition sources.

Precautions for fire fighters and special protective equipment: Explosive. Severe detonation hazard when exposed to heat. In case of small fire where the actual explosive is not involved, carefully remove explosives to a safe distance, otherwise evacuate area immediately and allow to burn. On burning will emit toxic fumes, including those of lead. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

Hazchem Code: E

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures: Shut off all possible sources of ignition. If contamination of sewers or waterways has occurred advise local emergency services.

Methods and materials for containment and clean up: Collect and seal in properly labelled containers. In the case of a transport accident notify the Police, Explosives Inspector and Orica Australia Pty Ltd (Telephone: 1800 033 111 -- 24 hour service) and/or Orica New Zealand Pty Ltd (Telephone: 0800 734 607 -- 24 hour service).

7. HANDLING AND STORAGE

Conditions for safe storage: Store away from sources of heat or ignition. Store material in a well ventilated magazine suitably licensed for Class 1.1B explosives.

Precautions for safe handling: Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Handle with care. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:
No value assigned for this specific material by the National Occupational Health and Safety Commission. However, Exposure Standard(s) for constituent(s):

Lead, inorganic dusts & fumes (as Pb): 8hr TWA = 0.15 mg/m3
Aluminium (metal dust): 8hr TWA = 10 mg/m3

As published by the National Occupational Health and Safety Commission.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Engineering controls:
When test firing, ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards.

Personal Protective Equipment:
Orica Personal Protection Guide No.1,1998: NOT IN USE

No special personal protective equipment required. Containment of charge prevents exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Article
Colour:	-
Odour:	Odourless
Solubility:	Insoluble in water.
Specific Gravity:	N Av

Relative Vapour Density (air=1):	N App
Vapour Pressure (20 °C):	N Av
Flash Point (°C):	N Av
Flammability Limits (%):	N Av
Autoignition Temperature (°C):	N Av
% Volatile by Volume:	Nil
Solubility in water (g/L):	N Av
Melting Point/Range (°C):	N App
Decomposition Point (°C):	N Av
Sublimation Point (°C):	N App
pH:	N App
Viscosity:	N App
Evaporation Rate:	N App

10. STABILITY AND REACTIVITY

Chemical stability: Detonation may occur from impact, friction, or excessive heating.

Conditions to avoid: Avoid exposure to heat.

Incompatible materials: None known.

Hazardous decomposition products: Lead.

Hazardous reactions: None known.

11. TOXICOLOGICAL INFORMATION

The construction of these articles should prevent any chemical contamination. No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: No information available.

Eye contact: May be an eye irritant. However, not a likely route of exposure.

Skin contact: Contact with contents may result in irritation.

Inhalation: Not expected to cause respiratory irritation (closed system). Inhalation of dust may result in respiratory irritation. Initiation can cause the presence of lead fume in air. Lead fume may be irritant to mucous membranes and respiratory tract.

Long Term Effects:
Long term exposure to low concentrations of lead (by any route) may result in blood effects, anaemia, central and peripheral nervous system damage, gastrointestinal disturbances, renal injury, foetotoxicity, developmental deficiencies in neonates and children, and testicular damage including decreased sperm count.

Toxicological Data:
No LD50 data available for the product.

Exposure to explosive charge material unlikely. The main hazard is the possibility of exposure to lead fumes when initiation occurs in a poorly ventilated area. The effects of lead poisoning may not be apparent immediately but significant absorption over a period of time may produce adverse effects as noted earlier due to accumulation of lead in the body.

12. ECOLOGICAL INFORMATION

Ecotoxicity Avoid contaminating waterways.

13. DISPOSAL CONSIDERATIONS

Disposal methods: For small quantities: Place in a blast hole and explode during blasting. Large quantities should be returned to Orica Australia Pty Ltd/Orica New Zealand Pty Ltd or be disposed of in conjunction with the Land Waste Management Authority. Do not move detonators showing obvious signs of deterioration. Contact Orica Australia Pty Ltd/Orica New Zealand Pty Ltd or relevant Dangerous Goods Authority.

14. TRANSPORT INFORMATION

Road and Rail Transport
Classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail; DANGEROUS GOODS.

UN No: 0360

Class-primary 1.1 B Explosive
Proper Shipping Name: DETONATOR ASSEMBLIES, NON-ELECTRIC
Hazchem Code: E

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No: 0360

Class-primary: 1.1 B Explosive
Proper Shipping Name: DETONATOR ASSEMBLIES, NON-ELECTRIC

Air Transport
TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in passenger aircraft and cargo aircraft.

15. REGULATORY INFORMATION

Classification: Based on available information, not classified as hazardous according to criteria of ASCC; NON-HAZARDOUS SUBSTANCE.
Poisons Schedule: None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

This material safety data sheet has been prepared by SH&E Shared Services, Orica.

Reason(s) for Issue:
5 Yearly Revised Primary MSDS

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Orica Limited cannot anticipate or control the conditions under which the product may be handled, each user must, prior to handling, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Orica representative or Orica Limited at the contact details on page 1.

Orica Limited's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.