

# MAXAM RIONEL MS

MAXAM Australia

Chemwatch Hazard Alert Code: 4

Chemwatch: 4868-71

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Safety Data Sheet according to WHS and ADG requirements

S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	MAXAM RIONEL MS
Synonyms	MS Delays
Proper shipping name	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting
Other means of identification	Not Available

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	For general blasting purposes, mainly to initiate other explosives or for special applications. 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. DANGER - If misused or disposed of improperly material may explode and cause death or injury. DO NOT HANDLE WHEN IN DOUBT.
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### Details of the supplier of the safety data sheet

Registered company name	MAXAM Australia
Address	141 Boundary Road Oxley QLD 4075 Australia
Telephone	+61 7 3717 1818
Fax	+61 7 3717 1888
Website	http://www.maxam-corp.com.au
Email	licensing.au@maxam.net

### Emergency telephone number


Association / Organisation	Not Available
Emergency telephone numbers	1800 833 111 (24hrs)
Other emergency telephone numbers	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification <sup>[1]</sup>	Explosive Division 1.4
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)	
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SIGNAL WORD **WARNING**

**Hazard statement(s)**

<b>H204</b>	Fire or projection hazard.
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**Precautionary statement(s) Prevention**

<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
<b>P250</b>	Do not subject to grinding/shock/sources of friction.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P240</b>	Ground/bond container and receiving equipment.

**Precautionary statement(s) Response**

<b>P370+P380</b>	In case of fire: Evacuate area.
<b>P372</b>	Explosion risk in case of fire.
<b>P374</b>	Fight fire with normal precautions from a reasonable distance.
<b>P373</b>	DO NOT fight fire when fire reaches explosives.

**Precautionary statement(s) Storage**

<b>P401</b>	Store according to local regulations for explosives.
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**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container in accordance with local regulations.
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**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

**Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
78-11-5	>60	<u>pentaerythritol tetranitrate</u>
13424-46-9	10-30	<u>lead azide</u>

**SECTION 4 FIRST AID MEASURES**

**Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul> <p>In case of burns:</p> <ul style="list-style-type: none"> <li>▶ Quickly immerse affected area in cold running water for 10 to 15 minutes.</li> <li>▶ Bandage lightly with a sterile dressing. Treat for shock if required.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<p>Not considered a normal route of entry. The form and packaging of explosive detonators prevents any significant contamination by the charge.</p>

**Indication of any immediate medical attention and special treatment needed**

Delayed pulmonary oedema may result following exposure to nitrous oxides formed during an explosion or on thermal decomposition of the explosive.

Continued...

Long term exposure to low airborne concentrations of lead from test firing of detonators of this type may result in altered haemoglobin breakdown, kidney damage, anaemia and central and peripheral nervous system damage.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

DO NOT fight fires involving explosives.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.</li> <li>▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.</li> </ul>
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### Advice for firefighters

<b>Fire Fighting</b>	DO NOT fight fires involving explosives.   Hazchem or Emergency Action Code: 1YE
<b>Fire/Explosion Hazard</b>	Div 1.4, Compatibility Group A and B DANGER: SEVERE EXPLOSION HAZARD!   Combustible.   Detonation may occur from heavy impact or excessive heating.   Dry material is sensitive to shock, friction and sparks.   Heating may cause expansion or decomposition leading to violent rupture of containers.   Heat affected containers remain hazardous.   May detonate in a mass explosion if confined or mixed with incompatible materials.   Explosives can supply own oxygen for combustion and smothering action of foam or dry chemical may be ineffective.   May emit irritating, poisonous or corrosive fumes.   Combustion or decomposition produces oxides of nitrogen (NOx), carbon monoxide (CO) and carbon dioxide (CO <sub>2</sub> )   On burning under confined or semi-confined conditions toxic fumes of   lead will be present.
<b>HAZCHEM</b>	1YE

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<p><b>WARNING!: EXPLOSIVE.</b></p> <p>BLAST and/or PROJECTION and/or FIRE HAZARD</p> <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid inhalation of the material and avoid contact with eyes and skin.</li> <li>▶ Wear impervious gloves and safety glasses.</li> </ul>
<b>Major Spills</b>	<p><b>WARNING!: EXPLOSIVE.</b></p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Handle gently. Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Avoid all personal contact, including inhalation.</li> </ul> <p>  Explosives should not be abandoned at any location for any reason.   Do not handle during electrical storms.   Always stay away from area of explosion or disposal sites, behind suitable barriers.</p>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store cases in a well ventilated magazine licensed for the appropriate Class, Division and Compatibility Group.</li> <li>▶ Rotate stock to prevent ageing. Use on FIFO (first in-first out) basis.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> <p>  Protect against lightning.</p>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods.</li> <li>▶ Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore</li> </ul>
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	<ul style="list-style-type: none"> <li>▶ on the assignment to a particular division</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.</li> <li>▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.</li> <li>▶ Dangerous goods of other classes.</li> </ul> Remove all ignition sources.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	lead azide	Lead, inorganic dusts & fumes (as Pb)	0.05 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
pentaerythritol tetranitrate	Pentaerythritol tetranitrate	1.2 mg/m <sup>3</sup>	13 mg/m <sup>3</sup>	330 mg/m <sup>3</sup>

Ingredient	Original IDLH	Revised IDLH
pentaerythritol tetranitrate	Not Available	Not Available
lead azide	100 mg/m <sup>3</sup>	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	Product needs to be used by experienced and skilled personnel under the supervision of a qualified Shotfirer.
<b>Personal protection</b>	
<b>Eye and face protection</b>	▶ Generally not applicable.
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Cotton gloves</li> <li>▶ Safety footwear</li> </ul>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	▶ Generally not applicable.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	A precision heavy duty initiator composed of a flexible shock tube, a millisecond delay detonator (aluminium tube) and a detonating cord connector.
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<b>Physical state</b>	Manufactured	<b>Relative density (Water = 1)</b>	Not Applicable
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Explosive
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Applicable
<b>Melting point / freezing point (°C)</b>	Explosive	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available

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<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Not Applicable	<b>pH as a solution (1%)</b>	Not Applicable
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	1021.7

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Hazardous polymerisation will not occur.  Detonation may occur from impact or heat. Avoid all contact with other chemicals. Conditions contributing to instability - heat (confinement), stacking (burning) Explodes at 160 degrees Celsius or on impact, produces shrapnel.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

<b>Inhaled</b>	<ul style="list-style-type: none"> <li>▸ Generally not applicable.</li> </ul>  Test firing in poorly ventilated areas can cause lead fume exposure.
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▸ Generally not applicable.</li> </ul>  Explosive ingredients are contained wholly within a small tube.
<b>Skin Contact</b>	<ul style="list-style-type: none"> <li>▸ Generally not applicable.</li> </ul>  Accidental detonation of explosive devices can cause lacerations, punctures and/or traumatic injury. Severity of the injuries is dependent on the number and proximity of the detonators.
<b>Eye</b>	<ul style="list-style-type: none"> <li>▸ Generally not applicable.</li> </ul>  Explosive ingredients are contained wholly within a small tube.
<b>Chronic</b>	Short term exposure by all routes is considered to be practically non-harmful apart from explosive nature of product. Over-exposure to lead fumes from test firing in poorly ventilated areas may result in anaemia, kidney and nervous system damage.

<b>MAXAM RIONEL MS</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>pentaerythritol tetranitrate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 1660 mg/kg <sup>[2]</sup>	Not Available
<b>lead azide</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>LEAD AZIDE</b>	<b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. Intraperitoneal (rat) LD <sub>50</sub> ? >150 mg/kg Nil reported
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<b>Acute Toxicity</b>	☒	<b>Carcinogenicity</b>	☒
<b>Skin Irritation/Corrosion</b>	☒	<b>Reproductivity</b>	☒
<b>Serious Eye Damage/Irritation</b>	☒	<b>STOT - Single Exposure</b>	☒

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Respiratory or Skin sensitisation	⊘	STOT - Repeated Exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

Legend: ✘ – Data available but does not fill the criteria for classification  
✔ – Data available to make classification  
⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
MAXAM RIONEL MS	Not Available	Not Available	Not Available	Not Available	Not Available
pentaerythritol tetranitrate	Not Available	Not Available	Not Available	Not Available	Not Available
lead azide	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Large quantities shall be returned to MAXAM Australia Pty Ltd or be disposed of in conjunction with the relevant State Dangerous Goods Branch. Small quantities shall be consumed in a blast hole and exploded during blasting. Dispose of contents/container in accordance with local/regional/national/international regulations
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO

MAXAM RIONEL MS

<b>HAZCHEM</b>	1YE
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**Land transport (ADG)**

<b>UN number</b>	0361
<b>UN proper shipping name</b>	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting
<b>Transport hazard class(es)</b>	Class : 1.4B Subrisk : Not Applicable
<b>Packing group</b>	Not Applicable
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	Special provisions : Not Applicable Limited quantity : 0

**Air transport (ICAO-IATA / DGR)**

<b>UN number</b>	0361
<b>UN proper shipping name</b>	Detonator assemblies, non-electric for blasting
<b>Transport hazard class(es)</b>	ICAO/IATA Class : 1.4B ICAO / IATA Subrisk : Not Applicable ERG Code : 1L
<b>Packing group</b>	Not Applicable
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	Special provisions : Not Applicable Cargo Only Packing Instructions : 131 Cargo Only Maximum Qty / Pack : 75 kg Passenger and Cargo Packing Instructions : Forbidden Passenger and Cargo Maximum Qty / Pack : Forbidden Passenger and Cargo Limited Quantity Packing Instructions : Forbidden Passenger and Cargo Limited Maximum Qty / Pack : Forbidden

**Sea transport (IMDG-Code / GGVSee)**

<b>UN number</b>	0361
<b>UN proper shipping name</b>	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting
<b>Transport hazard class(es)</b>	IMDG Class : 1.4B IMDG Subrisk : Not Applicable
<b>Packing group</b>	Not Applicable
<b>Environmental hazard</b>	Not Applicable
<b>Special precautions for user</b>	EMS Number : F-B , S-X Special provisions : Not Applicable Limited Quantities : 0

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**SECTION 15 REGULATORY INFORMATION**

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**PENTAERYTHRITOL TETRANITRATE(78-11-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix A

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

**LEAD AZIDE(13424-46-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix A

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

**National Inventory Status**

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (pentaerythritol tetranitrate; lead azide)
China - IECSC	N (pentaerythritol tetranitrate; lead azide)
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N (pentaerythritol tetranitrate; lead azide)
USA - TSCA	Y
<b>Legend:</b>	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**SECTION 16 OTHER INFORMATION**

<b>Revision Date</b>	16/09/2015
<b>Initial Date</b>	Not Available

**Other information****Ingredients with multiple cas numbers**

Name	CAS No
pentaerythritol tetranitrate	78-11-5, 108736-71-6

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations



OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.