

# MAXAM RIOBOOSTER

MAXAM Australia

Chemwatch Hazard Alert Code: 4

Chemwatch: 4875-33

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Safety Data Sheet according to WHS and ADG requirements

Initial Date: **Not Available**

S.GHS.AUS.EN

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

### Product Identifier

<b>Product name</b>	MAXAM RIOBOOSTER
<b>Synonyms</b>	RIOBOOSTER 150, RIOBOOSTER 400, RIOBOOSTER 60, RIOBOOSTER Plus
<b>Proper shipping name</b>	BOOSTERS without detonator†
<b>Other means of identification</b>	Not Available

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

<b>Relevant identified uses</b>	Blasting operations.
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### Details of the supplier of the safety data sheet

<b>Registered company name</b>	MAXAM Australia
<b>Address</b>	141 Boundary Road QLD Oxley 4075 Australia
<b>Telephone</b>	+61 7 3717 1818
<b>Fax</b>	+61 7 3717 1888
<b>Website</b>	<a href="https://www.maxam-corp.com.au">https://www.maxam-corp.com.au</a>
<b>Email</b>	licensing.au@maxam.net

### Emergency telephone number

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

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.

#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	2
Toxicity	3	4
Body Contact	3	4
Reactivity	4	4
Chronic	2	3

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

<b>Poisons Schedule</b>	Not Applicable
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**MAXAM RIOBOOSTER**

<b>Classification</b> <sup>[1]</sup>	Explosive Division 1.1, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 3, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

**Label elements**

<b>GHS label elements</b>	
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<b>SIGNAL WORD</b>	<b>DANGER</b>
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**Hazard statement(s)**

<b>H201</b>	Explosive; mass explosion hazard.
<b>H301</b>	Toxic if swallowed.
<b>H311</b>	Toxic in contact with skin.
<b>H331</b>	Toxic if inhaled.
<b>H373</b>	May cause damage to organs.
<b>H411</b>	Toxic to aquatic life with long lasting effects.

**Precautionary statement(s) Prevention**

<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
<b>P230</b>	Keep wetted with phlegmatizer.
<b>P250</b>	Do not subject to grinding/shock/sources of friction.
<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.

**Precautionary statement(s) Response**

<b>P301+P310</b>	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
<b>P330</b>	Rinse mouth.
<b>P363</b>	Wash contaminated clothing before reuse.
<b>P370+P380</b>	In case of fire: Evacuate area.

**Precautionary statement(s) Storage**

<b>P403+P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P405</b>	Store locked up.
<b>P401</b>	Store according to local regulations for explosives.

**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 (densensitised)</u>
118-96-7	10-40	<u>trinitrotoluene (TNT)</u>
Not Available	<30	Ingredients determined not to be hazardous

**SECTION 4 FIRST AID MEASURES**

## MAXAM RIOBOOSTER

## 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>▶ Immediately hold eyelids apart and flush the eye continuously with 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>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> <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>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li> <li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> <p>Not considered a normal route of entry.</p>

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

Symptoms of vasodilation and reflex tachycardia may present following organic nitrate overdose; most organic nitrates are extensively metabolised by hydrolysis to inorganic nitrites. Organic nitrates and nitrites are readily absorbed through the skin, lungs, mucosa and gastro-intestinal tract.

The toxicity of nitrates and nitrites result from their vasodilating properties and their propensity to form methaemoglobin.

- ▶ Most produce a peak effect within 30 minutes.
- ▶ Clinical signs of cyanosis appear before other symptoms because of the dark pigmentation of methaemoglobin.
- ▶ Initial attention should be directed towards improving oxygen delivery, with assisted ventilation, if necessary. Hyperbaric oxygen has not demonstrated conclusive benefits.
- ▶ Institute cardiac monitoring, especially in patients with coronary artery or pulmonary disease.
- ▶ Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- ▶ Naloxone, glucose and thiamine should be given if a multiple ingestion is suspected.
- ▶ Decontaminate using Ipecac Syrup for alert patients or lavage for obtunded patients who present within 2-4 hours of ingestion.
- ▶ Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 5 minutes; repeat, using the same dose if symptoms of hypoxia fail to subside within 1 hour.

[Ellenhorn and Barceloux: Medical Toxicology]

## BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B,NS,SQ

Continued...

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test. Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

|DO NOT fight fires involving explosives.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	Avoid all ignition sources, explosives are at risk from shock, friction, fire or other sources of ignition.
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### Advice for firefighters

<b>Fire Fighting</b>	DO NOT fight fires involving explosives.   Hazchem or Emergency Action Code: E
<b>Fire/Explosion Hazard</b>	In cases where the explosive/s are NOT involved in small fire events, if possible, safely remove explosives to a safe distance stipulated by the MAXAM Emergency Procedure Guide, otherwise evacuate area immediately and allow to burn. DO NOT fight fire as fire increases the risk of explosion. An adjacent detonation may also involve the risk of explosion. Mass explosion hazard.   Burning explosives may emit toxic fumes, including Carbon, oxides of Nitrogen, Lead amp; Sulfur.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<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> <li>▶ Clean up all spills immediately.</li> <li>▶ Wear protective clothing, safety glasses, dust mask, gloves.</li> <li>▶ Secure load if safe to do so. Bundle/collect recoverable product.</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> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store cases in a well ventilated magazine licenced 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>

### 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 on the assignment to a particular division</li> </ul>
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**Storage incompatibility**

- ▶ Avoid contact with other explosives, pyrotechnics, solvents, adhesives, paints, cleaners and unauthorized metals, plastics, packing equipment and materials.
- ▶ Avoid contamination with acids, alkalis, reducing agents, amines and phosphorus.
- ▶ Avoid strong acids, bases.
- ▶ Avoid reaction with oxidising agents, bases and strong reducing agents.
- ▶ Explosion hazard may follow contact with incompatible materials

**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	trinitrotoluene (TNT)	2,4,6-Trinitrotoluene (TNT)	0.5 mg/m3	Not Available	Not Available	Sk

**EMERGENCY LIMITS**

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
pentaerythritol tetranitrate (densensitised)	Pentaerythritol tetranitrate	0.44 mg/m3	4.8 mg/m3	330 mg/m3
trinitrotoluene (TNT)	Trinitrotoluene, 2,4,6-	0.3 mg/m3	6.2 mg/m3	1000 mg/m3

Ingredient	Original IDLH	Revised IDLH
pentaerythritol tetranitrate (densensitised)	Not Available	Not Available
trinitrotoluene (TNT)	1,000 mg/m3	500 mg/m3
Ingredients determined not to be hazardous	Not Available	Not Available

**Exposure controls**

<b>Appropriate engineering controls</b>	<p>Engineering controls for explosive articles are designed to reduce or eliminate fragmentation and/or blast effects either by suppression of the source of detonation or by protection at the exposed location, or both. Barricades, shields, contained detonation chambers, and "zero quantity-distance (Q-D)" magazines are examples of engineering controls.</p> <p>Engineering controls are designed and tested in a rigorous fashion. The construction of the engineering control must be carefully duplicated in field applications to assure it will function properly.</p> <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Full face shield may be required for supplementary but never for primary protection of eyes</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>Non-sparking or conductive footwear essential. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an</p>

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	shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn.
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	For handling explosives or explosive compositions: <ul style="list-style-type: none"> <li>▶ Wear close-fitting flame-protection treated clothing closed at the neck and sleeves.</li> <li>▶ Cotton underwear, socks and conductive shoes are recommended to avoid human static discharge.</li> </ul> Manufacture may require: <ul style="list-style-type: none"> <li>▶ Non-static flame retardant treated clothing</li> <li>▶ Access to deluge Safety shower</li> <li>▶ Barrier cream.</li> </ul> No special equipment required due to the physical form of the product.
<b>Thermal hazards</b>	Not Available

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	Cast solid booster encased in a cardboard cylinder.		
<b>Physical state</b>	Manufactured	<b>Relative density (Water = 1)</b>	1.6 g/cc bulk density
<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>	Not Available
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<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
<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 Available
<b>Vapour pressure (kPa)</b>	Not Available	<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>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Presence of shock and friction</li> <li>▶ Presence of heat source and ignition source</li> </ul>
<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

## MAXAM RIOBOOSTER

## Information on toxicological effects

<b>Inhaled</b>	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. Not normally a hazard due to physical form of product. The decomposition vapours are harmful if inhaled in large volume.
<b>Ingestion</b>	<b>Toxic effects</b> may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure. Not normally a hazard due to physical form of product.
<b>Skin Contact</b>	Skin contact with the material may produce toxic effects; systemic effects may result following absorption. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Not normally a hazard due to physical form of product.
<b>Eye</b>	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). Not normally a hazard due to physical form of product.
<b>Chronic</b>	Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Respiratory sensitisation may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping.

<b>MAXAM RIOBOOSTER</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>pentaerythritol tetranitrate (desensitised)</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 1660 mg/kg <sup>[2]</sup>	Not Available
<b>trinitrotoluene (TNT)</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 607 mg/kgd <sup>[2]</sup>	Skin (rabbit): 500 mg/24h - mild
<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>PENTAERYTHRITOL TETRANITRATE (DENSENSITISED)</b>	Oral (human) TDLo; 1669 mg/kg/8Y-C
<b>TRINITROTOLUENE (TNT)</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

<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>	⊖
<b>Respiratory or Skin sensitisation</b>	⊖	<b>STOT - Repeated Exposure</b>	✓
<b>Mutagenicity</b>	⊖	<b>Aspiration Hazard</b>	⊖

**Legend:** ✗ – Data available but does not fill the criteria for classification  
 ✓ – Data required to make classification available  
 ⊖ – Data Not Available to make classification

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## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
pentaerythritol tetranitrate (densensitised)	LC50	96	Fish	ca.926mg/L	2
trinitrotoluene (TNT)	LC50	96	Fish	1.2mg/L	4
trinitrotoluene (TNT)	EC50	48	Crustacea	9.49mg/L	2
trinitrotoluene (TNT)	EC50	96	Algae or other aquatic plants	>0.0021- <0.0029mg/L	2
trinitrotoluene (TNT)	EC50	96	Algae or other aquatic plants	>0.0023- <0.0044mg/L	2
trinitrotoluene (TNT)	NOEC	72	Algae or other aquatic plants	<0.1mg/L	2

## Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - 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

Toxic to aquatic organisms.

May cause long-term adverse effects in the aquatic environment.

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

## Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
trinitrotoluene (TNT)	HIGH	HIGH

## Bioaccumulative potential

Ingredient	Bioaccumulation
trinitrotoluene (TNT)	LOW (LogKOW = 1.6)

## Mobility in soil

Ingredient	Mobility
trinitrotoluene (TNT)	LOW (KOC = 1834)



## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> </ul> <p>[Large quantities of deteriorated or damaged explosives shall be reported to MAXAM Australia Pty Ltd. Small quantities shall be consumed in a blast hole ONLY when the disposed product will not affect blast performance. Dispose of contents/container in accordance with local/regional/national/international regulations.</p>
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## SECTION 14 TRANSPORT INFORMATION

## Labels Required

	
Marine Pollutant	
HAZCHEM	1YE



## MAXAM RIOBOOSTER

## Land transport (ADG)

UN number	0042	
Packing group	Not Applicable	
UN proper shipping name	BOOSTERS without detonator†	
Environmental hazard	Not Applicable	
Transport hazard class(es)	Class	1.1D
	Subrisk	Not Applicable
Special precautions for user	Special provisions	Not Applicable
	Limited quantity	0

## Air transport (ICAO-IATA / DGR)

UN number	0042	
Packing group	Not Applicable	
UN proper shipping name	Boosters without detonator	
Environmental hazard	Not Applicable	
Transport hazard class(es)	ICAO/IATA Class	1.1D
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	1L
Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Forbidden
	Cargo Only Maximum Qty / Pack	Forbidden
	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)

UN number	0042	
Packing group	Not Applicable	
UN proper shipping name	BOOSTERS without detonator	
Environmental hazard	Marine Pollutant	
Transport hazard class(es)	IMDG Class	1.1D
	IMDG Subrisk	Not Applicable
Special precautions for user	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 (DENSENSITISED)(78-11-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists  
Australia Inventory of Chemical Substances (AICS)

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

Continued...

**TRINITROTOLUENE (TNT)(118-96-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Exposure Standards

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

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
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (pentaerythritol tetranitrate (densensitised); trinitrotoluene (TNT))
China - IECSC	N (pentaerythritol tetranitrate (densensitised))
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	N (pentaerythritol tetranitrate (densensitised))
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****Other information**

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.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

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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