



# Material Safety Data Sheet

This material is hazardous according to criteria of NOHSC.  
Classified as Dangerous Goods by the criteria of the Australian Code for the Transport of Explosives by Road and Rail.

## 1. Identification of the substance/preparation and of the company/undertaking

**Product Name:** PENTO-SEIS EX

**Synonyms:** PENTO-SEIS  
**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. Composition/information on ingredients

**Product Description:** Initiating explosive charges. Mild odour. Cardboard outer sleeve.

Components / CAS Number	Proportion	Risk Phrases
Pentaerythritol tetranitrate (PETN) 78-11-5	30-60%	R3
Trinitrotoluene (TNT) 118-96-7	30-60%	R2, R23/24/25, R33
Sodium nitrate 7631-99-4	< 10%	R8
Barium sulfate 7727-43-7	<10%	-

## 3. Hazards identification

**Risk Phrases:** Risk of explosion by shock, friction, fire or other sources of ignition. Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects.

**Poisons Schedule:** None allocated.

## 4. First-aid measures

For advice, contact a Poisons Information Centre (Phone eg. Australia 131 126; New Zealand 0 800 764766) or a doctor.

**Inhalation:** Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing

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and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discoloration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

- Skin Contact:** If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. A component of this material can be absorbed through the skin with resultant toxic effects. Seek immediate medical assistance.
- 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:** Immediately rinse mouth with water. If swallowed, give a glass of water to drink. Seek immediate medical assistance.
- Notes to physician:** Treat symptomatically. May cause methemoglobinemia. PETN is a vasodilator. Maintain blood pressure by fluid administration. (1) Liver and kidney damage are possible complications. (2) Explosive material.

## 5. Fire-fighting measures

- Specific Hazards:** Explosive material. Avoid all ignition sources. Risk of explosion by shock, friction, fire or other sources of ignition.
- Fire-fighting advice:** In case of a small fire, if actual explosive is not burning, carefully remove as much explosive as possible to a safe distance. Fire fighters to wear self-contained breathing apparatus if risk of exposure to vapour or products of combustion. However, if explosive is burning, evacuate area immediately. Do NOT fight fire. On burning under confined or semi-confined conditions, some oxides of nitrogen and/or carbon monoxide will be present. Brown fumes indicate the presence of toxic oxides of nitrogen.

## 6. Accidental release measures

Clear area of all unprotected personnel. Shut off all possible sources of ignition. 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

- Handling advice:** Avoid skin and eye contact. Do NOT subject the material to impact, friction between hard surfaces nor to any form of heating. Do not drill into explosive. Handle with care.
- Storage advice:** Store material in a well ventilated magazine suitably licensed for Class 1.1D Explosives. Store away from sources of heat or ignition.

## 8. Exposure controls/personal protection

**Occupational Exposure Limits:**  
No value assigned for this specific material by the National Occupational Health and Safety Commission. However,

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Exposure Standard(s) for constituent(s):

2,4,6-Trinitrotoluene (TNT): 8hr TWA = 0.5 mg/m<sup>3</sup>, Sk  
Barium sulfate: 8hr TWA = 10 mg/m<sup>3</sup>

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.

'Sk' Notice – absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

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 Control Measures:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Exposure Standards. Keep containers closed when not in use.

## Personal Protective Equipment:

Orica Personal Protection Guide No. 1, 1998: B - OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.

Wear overalls, safety glasses and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet. If risk of inhalation exists, wear dust mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

## 9. Physical and chemical properties

Physical state:	Solid
Odour:	Mild
Solubility:	Insoluble in water.
Flash Point (°C):	Not applicable.

## 10. Stability and reactivity

**Stability:** Extreme risk of explosion by shock, friction, fire or other sources of ignition. Heat, particularly under confinement, may cause a mass explosion.

## 11. Toxicological information

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:** Swallowing can result in nausea, vomiting, weakness, dizziness, headaches, jaundice, cyanosis, pallor,

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liver damage, blood effects and convulsions. (1,2)

**Eye contact:** May be an eye irritant.

**Skin contact:** Contact with skin may result in irritation. Component/s of this material can be absorbed through the skin with resultant toxic effects. May cause skin sensitisation in sensitive individuals. Repeated or prolonged skin contact may lead to allergic contact dermatitis.

**Inhalation:** Breathing in dust may result in respiratory irritation. Breathing in high concentrations may result in the same symptoms described for 'INGESTION'.

## Long Term Effects:

Available evidence from animal studies indicate that repeated or prolonged exposure to a component of this material could result in effects on the blood system, central nervous system, kidneys and liver. (2)

## Toxicological Data:

No LD50 data available for the product. For the constituent Trinitrotoluene (2):

Oral LD50 (rat): 795 mg/kg.

PETN is absorbed slowly through the lungs and gastrointestinal tract but not appreciably through the skin. Vasodilatory agent, therefore causes dilation of the blood vessels and a reduction in blood pressure. Exposure to high doses may cause methaemoglobinaemia. Negative in AMES test for mutagenicity. (1)

## 12. Ecotoxicological information

Avoid contaminating waterways.

## 13. Disposal considerations

Refer to Waste Management Authority. Small quantities of damaged or deteriorated explosives may be destroyed by inclusion in a blast hole containing good explosive(s). For large quantities of damaged or deteriorated explosives notify Orica Australia Pty Ltd and/or Orica New Zealand Pty Ltd.

## 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.

**UN No:** 0042  
**Class-primary** 1.1 D Explosive  
**Proper Shipping Name:** BOOSTERS

**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.

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**Proper Shipping Name:** BOOSTERS

## 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:** This material is hazardous according to criteria of NOHSC.  
T : Toxic

**Risk Phrase(s):** R2: Risk of explosion by shock, friction, fire or other sources of ignition.  
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.  
R33: Danger of cumulative effects.

**Safety Phrase(s):** S2: Keep out of the reach of children.  
S24/25: Avoid contact with skin and eyes.  
S35: This material and its container must be disposed of in a safe way.  
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

**Poisons Schedule:** None allocated.

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

## 16. Other information

- (1) Material Safety Data Sheet - Orica Australia Pty Ltd; 11/ 2000.
- (2) Material Safety Data Sheet - Orica Australia Pty Ltd; 02/ 1998.

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

**Reason(s) for Issue:**  
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 used, each user must, prior to usage, assess and control the risks arising from its use of the material.

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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.

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