



Material Safety Data Sheet

Orica Canada Inc.
Maple Street
Brownsburg, PQ
For MSDS Requests: 450-533-4201

Orica USA Inc.
33101 E. Quincy Avenue
Watkins, CO 80137
For MSDS Requests: 303-268-5000

EMERGENCY CONTACTS

FOR CHEMICAL EMERGENCIES(24 HOUR) INVOLVING TRANSPORTATION, SPILL, LEAK, RELEASE, FIRE OR ACCIDENTS: IN CANADA CALL THE ORICA CANADA TRANSPORTATION EMERGENCY RESPONSE SYSTEM AT 1-877-561-3636; IN THE U.S. CALL CHEMTREC (800) 424-9300. IN THE U.S. FOR LOST, STOLEN OR MISPLACED EXPLOSIVES CALL: BATF (800) 424-9555.

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Pentex Boosters
MSDS Number: 60000
Manufactured By: Orica Brazil Inc.
Product Use: Booster used in blasting systems

Date Issued: 11-07-05

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT(S)	% (w/w)	ACGIH TWA	CAS NO.
Trinitrotoluene (TNT)	30-50	0.1 mg/M ³ (skin)	118-96-7
Pentaerythritol Tetranitrate (PETN)	50-70	Not Listed	78-11-5

Ingredients that are not listed above, that are used in the product are not hazardous as defined under current legislation.

SECTION 3 - HAZARD IDENTIFICATION

Emergency Overview: Risk of explosion by shock, friction, fire or other sources of ignition. Very toxic if swallowed. Irritating to eyes, respiratory system and skin. May cause methemoglobinemia. May cause sensitization by skin contact. Read the entire MSDS for a more thorough evaluation of the hazards.

SECTION 4 - FIRST AID MEASURES

Inhalation: If detonation fumes are inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen and contact a physician. Note: Oxygen should only be administered by a person trained in its use.

Skin Contact: Wash skin with soap and water

Eye Contact: Flush eyes with clean water for 15 minutes, then seek medical attention

Ingestion: If victim is alert and not convulsing, rinse mouth out and give 200-300 mL (1 cup) of water to dilute material. DO NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head positioned to avoid breathing in of vomitus, rinse mouth and administer more water. Obtain medical attention IMMEDIATELY.

Note to Physicians: Symptomatic. Administer oxygen if there are signs of cyanosis. If clinical condition deteriorates, administer 10 cc Methylene Blue intravenously. It is unlikely for this to be required with methemoglobin level of less than 40%. Symptomatic. Do not give vasopressor drugs (e.g. epinephrine, adrenalin, ephedrine, etc.) as there may be danger of producing cardiac arrhythmia. Medical conditions that may be aggravated by exposure to this product include hypotension and skin disorders.

SECTION 5 - FIRE-FIGHTING MEASURES

Flash Point: This product does not flash.

Flammable Limits (Lower): Not Applicable

Flammable Limits (Upper): Not applicable

Auto Ignition Temperature: Not available

Decomposition Temperature: Not available

Rate of Burning: Not available

Explosive Power: Not available

Sensitivity to Mechanical Impact: Not available

Sensitivity to Static Discharge: Not available

Hazardous Reactions: Will detonate if suitably primed by heat, flame or **significant** impact. Hazardous gases produced in fire are Nitrogen Oxides and Carbon monoxide.

Fire and Explosion Hazards:

Extinguishing Media: None

Fire Fighting Procedures: DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Note: Division 1.1 explosives: Evacuate to 5000 feet (1 Mile). Consult the *North American Emergency Response Guide* number 112 for more details

Fire Fighting Protective Equipment: Not applicable.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spills, Leaks, or Releases: Review fire and explosion hazards before proceeding with clean up. Remove and protect ignition sources. Wear protective equipment during clean up. Mop up with water using non sparking tools. It is suggested that only personnel trained in emergency response should respond. Verify complete account of the product (s). Notify authorities and follow applicable spill reporting requirements.

Deactivating Chemicals: Not Applicable.

SECTION 7 - HANDLING AND STORAGE

Storage Requirements: Store in compliance with applicable regulatory requirements. Keep away from ignition sources, strong shock, flames and heat. Store in a cool, dry location designed for explosives storage.

Storage Temperature: Store in accordance with the requirements of local legislation respecting explosive storage.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

PREVENTIVE MEASURES:

Engineering Controls: General ventilation should be appropriate under conditions of use.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Chemical/Safety goggles are recommended.

Skin Protection: Cotton or leather gloves, clothing to protect exposed skin such as flameproof coveralls and conductive boots.

Respiratory Protection: Wear NIOSH approved respirator if concentrations are above acceptable limits.

EXPOSURE GUIDELINES:

PRODUCT: None established for product

HAZARDOUS INGREDIENT(S):

Trinitrotoluene (TNT)

ACGIH TLV – 0.1 mg/M³ (skin)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name(s): Pentex CD 3 * 90, Pentex CD 5.5 * 150, Pentex CD 8 * 227, Pentex CD 12 * 340, Pentex CD 16 * 454, Pentex SB 8, Pentex SB 20, Pentex SB 60, Pentex SL 8 * 227, Pentex SL 12 * 340, Pentex SL 16 * 454

Chemical Name: Not applicable

Chemical Family: Booster explosives

Molecular Formula: Not applicable

Appearance: Tan to brown solid

Odour: No noticeable odour

pH: Not applicable

Vapour Pressure (mm Hg at 20°C/68°F): Not applicable

Vapour Density (Air=1): Not applicable

Boiling Point: Not applicable

Melting Point: 176°F

Solubility (Water): Insoluble

Solubility (Other): Not available

Specific Gravity: 1.5 - 1.65

Evaporation Rate: Not applicable

Additional Properties: None

SECTION 10 - STABILITY AND REACTIVITY

Hazardous Decomposition Products: Oxides of Nitrogen and Carbon.

Chemical Stability: Stable under normal conditions.

Conditions to Avoid: Ignition sources, strong shock, heat and flame.

Incompatibility with other Substances: Not compatible with strong acids such as nitric acid.

Hazardous Polymerization: Will not polymerize.

SECTION 11 - TOXICOLOGICAL INFORMATION

Summary: Detonation may cause severe injury and death. All explosives are dangerous and must be handled carefully using approved safety procedures under the direction of competent, experienced personnel. Inhalation of explosive powders may cause nervous system irregularities including headache and dizziness. Nitrogen and Carbon Oxides generated during detonation are skin, eye and respiratory irritants.

TOXICOLOGICAL DATA:

PRODUCT: None established for product

INGREDIENTS:

Trinitrotoluene (TNT)

Oral LD50 (mouse) 25500 mg/kg

Pentaerythritol Tetranitrate (PETN)

Oral LD50 (rat) 795 mg/kg

POTENTIAL HEALTH EFFECTS:

Inhalation: High concentrations of the material may be irritating to the respiratory tract. May cause dizziness and nausea.

Skin Contact: May cause skin irritation. Repeated or prolonged contact may cause dermatitis. Can be absorbed through the skin. Evidence has indicated that an ingredient in this product may cause skin sensitization.

Eye Contact: Moderate irritant causing moderate initial pain.

Ingestion: Harmful if swallowed. May cause headache, weakness, anemia or liver injury.

Subchronic Effects: None known

Chronic Effects: None known

Carcinogenicity: Ingredients of this product are not listed as carcinogens by the National Toxicology Program (NTP), International Agency for Research for Cancer (IARC) or the Occupational Safety and Health Administration (OSHA)

Reproductive Effects: The ingredients of this product are not reproductive toxicants.

Teratogenicity and Fetotoxicity: None known

Synergistic Materials: None known.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicological Information: Harmful to aquatic life at low concentrations. (1.5 mg/L of TNT is toxic to fish)

Environmental Effects: Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds or rivers.

SECTION 13 - DISPOSAL CONSIDERATIONS

Burn under the supervision of an expert at an approved explosive burning ground or destroy by detonation in boreholes. Call upon the services of an Orica Canada Inc./Orica USA Inc. technical representative for assistance.

SECTION 14 - TRANSPORT INFORMATION

TDG Name: Boosters

TDG Class/Division: 1.1D

Product Identification Number (PIN): UN0042

Packing Group: II

Transportation Emergency Telephone Number: IN CANADA CALL 1-877-561-3636. IN THE US CALL CHEMTREC (800) 424-9300.

Proper Shipping Name: Boosters, without detonators

DOT Label: EXPLOSIVE 1.1D

DOT Placard: EXPLOSIVES 1.1



SECTION 15 - REGULATORY INFORMATION

CANADIAN CLASSIFICATION:

Controlled Products Regulations (WHMIS) Classification: This product is an explosive and is not regulated by WHMIS.

CEPA / Canadian Domestic Substances List (DSL): All ingredients in this product are on the Canadian Domestic Substances List

IARC Classification: Not listed

USA CLASSIFICATION:

OSHA Classification:

Physical: Explosive

Health: Skin Sensitizer, Irritant.

Target Organ: Eye, skin, liver, urinary tract, gastrointestinal tract, cardiovascular system, immune system

SARA Regulations Sections 313 and 40 CFR 372: This product does not contain substances subject to reporting requirements.

Ozone Protection and 40 CFR 42: This product does not contain, nor is it manufactured with ozone depleting substances.

Other Regulations/Legislation which apply to this product: Massachusetts Right to Know, Pennsylvania Right to Know, New Jersey Right to Know.

SECTION 16 - OTHER INFORMATION

Prepared by: Orica Inc. Technical Personnel.

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Orica Canada Inc./Orica USA Inc. will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein.