# SECTION 1 – IDENTIFICATION

## Name, Address, and Telephone of the Responsible Party

### Canada:
Orica Canada Inc.  
301 Rue Hotel-de-Ville  
Brownsburg-Chatham, QC J8G 3B5  
For SDS Requests: 1-855-26-ORICA (1-855-266-7422)  
sds.na@orica.com

### USA:
Orica USA Inc.  
33101 E. Quincy Avenue  
Watkins, CO 80137-9406  
For SDS Requests: 1-855-26-ORICA (1-855-266-7422)  
sds.na@orica.com

[www.oricaminingservices.com](http://www.oricaminingservices.com)

## Product Identifier

### Product Form:
Mixture

### Product Name:
Packaged Emulsion Explosives

### Trade Name(s):
Fortel™ Pro D  
Fortel™ Extra

### Synonyms:
Fortel™ Pro D  
Fortel™ Extra

## Other Means of Identification

### Product Class:
Emulsion Explosives, Packaged

### Intended Use of the Product:
Industrial blasting applications

## Emergency Telephone Number

**FOR 24 HOUR EMERGENCY, CALL**  
Canada: 1-877-561-3636 (Orica Transportation Emergency Response)  
USA: 1-800-424-9300 (CHEMTREC)

FOR CHEMICAL EMERGENCIES (24 HOUR) INVOLVING TRANSPORTATION, SPILL, LEAK, RELEASE, FIRE OR ACCIDENTS: IN CANADA CALL: THE ORICA TRANSPORTATION EMERGENCY RESPONSE SYSTEM AT 1-877-561-3636. IN THE U.S. CALL: CHEMTREC 1-800-424-9300. IN THE U.S.: FOR LOST, STOLEN, OR MISPLACED EXPLOSIVES CALL: BATF 1-800-800-3855. FORM ATF F 5400.5 MUST BE COMPLETED AND LOCAL AUTHORITIES (STATE/MUNICIPAL POLICE, ETC.) MUST BE ADVISED.

# SECTION 2 – HAZARD(S) IDENTIFICATION

## Classification of the Substance or Mixture

### Classification (GHS-US)

- **Expl. 1.5**  
  - **H205**

### Label Elements

- **GHS-US Labeling**

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**SDS# 1063**  
**Date:** 03/18/2015  
**Supersedes:** 12/15/2011
Hazard Pictograms (GHS-US): 

Signal Word (GHS-US): Danger 
Hazard Statements (GHS-US): H205 – May mass explode in fire 
Precautionary Statements (GHS-US): 
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking 
P264 - Wash exposed areas thoroughly after handling 
P280 - Wear protective gloves/protective clothing/eye protection/face protection 
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing 
P373 - DO NOT fight fire when fire reaches explosives 
P370+P380 - In case of fire: Evacuate area 
P372 - Explosion risk in case of fire 
P501 - Dispose of contents/container according to local, regional, national, and international regulations 

Other Hazards 
Hazard Not Otherwise Classified (HNOC): Not available 
Other Hazards: None 

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>Ingredient Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>(CAS No) 6484-52-2</td>
<td>65 - 85</td>
<td>Ox. Sol. 3, H272, Eye Irrit. 2A, H319</td>
<td></td>
</tr>
<tr>
<td>Sodium nitrate</td>
<td>(CAS No) 7631-99-4</td>
<td>0.1 – 10</td>
<td>Ox. Sol. 3, H272, Acute Tox. 4 (Oral), H302, Eye Irrit. 2A, H319</td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td>(CAS No) 7429-90-5</td>
<td>0.1 - 3</td>
<td>Comb. Dust, H232, Flam. Sol. 1, H228, Water-react. 2, H261</td>
<td></td>
</tr>
<tr>
<td>Mineral Oil</td>
<td>(CAS No) 64742-54-7</td>
<td>0 – 2</td>
<td>Asp. Tox. 1, H304</td>
<td></td>
</tr>
<tr>
<td>Wax (paraffin)</td>
<td>(CAS No) 8002-72-2</td>
<td>0.0 – 2.2</td>
<td>Not Classified</td>
<td></td>
</tr>
</tbody>
</table>

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials). 
Full text of H-phrases: see section 16 

SECTION 4 - FIRST AID MEASURES

Description of First Aid Measures 
This is a packaged product that will not result in exposure to the contents under normal conditions of use. In the event of contact, administer first aid appropriate for symptoms present. 
General: Never give anything by mouth to an unconscious person. If exposed or concerned, seek medical advice and attention.
Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.
Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Wash contaminated clothing before reuse.
Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.
Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

**Most Important Symptoms and Effects Both Acute and Delayed**

**General:** Avoid ingestion, contact with eyes or skin.

**Inhalation:** May cause respiratory irritation.

**Skin Contact:** May cause skin irritation.

**Eye Contact:** May cause serious eye irritation.

**Ingestion:** Seek medical attention.

**Chronic Symptoms:** None expected under normal conditions of use.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**
If exposed or concerned, get medical advice and attention.

### SECTION 5 - FIRE-FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media:** DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions.

**Unsuitable Extinguishing Media:** DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS

**Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Can explode or detonate under fire conditions. Burning material may produce toxic vapors.

**Explosion Hazard:** This product is an explosive with mass detonation hazard. Heating may cause an explosion.

**Reactivity:** Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in a large quantity.

**Advice for Firefighters**

**Firefighting Instructions:** DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Guard against re-entry.

**Protection During Firefighting:** See above

**Hazardous Combustion Products:** Nitrogen Oxides (NO\_x), Carbon Monoxide (CO). Ammonia.

**Reference to Other Sections:** Refer to section 9 for flammability properties.

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Avoid all contact with skin, eyes, or clothing. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Eliminate every possible source of ignition.

**For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

**For Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Eliminate ignition sources. Ventilate area.

**Environmental Precautions**
Prevent entry to sewers and public waters.

**Methods and Material for Containment and Cleaning Up**

**Methods for Cleaning Up:** Protect from all ignition sources. If no fire danger is present, and product is undamaged and/or uncontaminated, pick up or sweep up and repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. Follow applicable Federal, State,
and local spill reporting requirements.  

Reference to Other Sections  
See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see section 13.

SECTION 7 - HANDLING AND STORAGE  

Precautions for Safe Handling  
This is a packaged product that will not result in exposure to the contents under normal conditions of use.  

Additional Hazards When Processed: This product is an explosive and should only be used under the supervision of trained and licensed personnel. Use accepted safe industry practices when handling and using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death.  

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities  


Storage Conditions: Store in cool, dry, well-ventilated location. Store in compliance with Federal, State and local regulations. Keep away from heat, flame, ignition sources and strong shock. Do NOT store explosives in a detonator magazine or detonators in an explosive magazine. Keep containers closed. Explosives should be kept well away from initiating explosives; protected from physical damage; separated from oxidizing materials, combustibles, and sources of heat. Isolate from incompatibles.  

Incompatible Materials: Corrosives (strong acids and strong bases or alkalis)  

Specific End Use(s) For industrial blasting applications.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION  

Control Parameters  

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Product identifier:</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>(CAS No) 6484-52-2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Sodium nitrate</td>
<td>(CAS No) 7631-99-4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Aluminum</td>
<td>(CAS No) 7429-90-5</td>
<td>10 mg/m$^3$ (dust)</td>
<td>15 mg/m$^3$ (total)</td>
</tr>
<tr>
<td>Mineral Oil</td>
<td>(CAS No) 64742-54-7</td>
<td>5 mg/m$^3$ (mist)</td>
<td>5 mg/m$^3$ (mist)</td>
</tr>
<tr>
<td>Wax (paraffin)</td>
<td>(CAS No) 8002-72-2</td>
<td>2-10 mg/m$^3$ (wax fume)</td>
<td>None</td>
</tr>
</tbody>
</table>

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

Exposure Controls  

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.


Materials for Protective Clothing: protective clothing.  

Hand Protection: Protect against incidental skin contact.
**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>White or pink opaque semi-solid, which will appear gray if product contains aluminum. Typically paper or plastic chub packaging.</td>
</tr>
<tr>
<td>Odor</td>
<td>Faint petroleum odor</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Ammonium nitrate: 210 °C (410 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Vapor Density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>1.20 - 1.30 g/cc</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility</td>
<td>Partially soluble in water</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Explosive; mass explosion hazard</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Mechanical Impact</td>
<td>Not sensitive</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Static Discharge</td>
<td>Not sensitive</td>
</tr>
</tbody>
</table>

**SECTION 10 - STABILITY AND REACTIVITY**

**Reactivity:** Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in a large quantity.

**Chemical Stability:** Stable under normal temperature and pressure.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Keep away from heat, flame, ignition sources and strong shock.

**Incompatible Materials:** Corrosives (strong acids and strong bases or alkalis).

**Hazardous Decomposition Products:** Nitrogen Oxides (NOₓ), Carbon Monoxide (CO), Ammonia

**SECTION 11 - TOXICOLOGICAL INFORMATION**

**Information on Toxicological Effects - Product**

**Eye Protection:** Chemical goggles or safety glasses.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

**Environmental Exposure Controls:** Do not allow the product to be released into the environment.
Fortel™ Extra, Fortel™ Pro D

Safety Data Sheet

Acute Toxicity: Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: May cause eye irritation.
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: May cause skin irritation.
Symptoms/Injuries After Eye Contact: Causes eye irritation.
Symptoms/Injuries After Ingestion: If ingested, seek medical attention.

Information on Toxicological Effects - Ingredient(s)
LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral Rat</th>
<th>LC50 Inhalation Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium nitrate (7631-99-4)</td>
<td>&gt; 2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Ammonium nitrate (6484-52-2)</td>
<td>2217 mg/kg</td>
<td>&gt; 88.8 mg/l/4h</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

<table>
<thead>
<tr>
<th>Sodium nitrate (7631-99-4)</th>
<th>LC50 Fish 1 2000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LC 50 Fish 2 994.4 - 1107 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])</td>
</tr>
</tbody>
</table>

Persistence and Degradability

<table>
<thead>
<tr>
<th>Sodium nitrate (7631-99-4)</th>
<th>Readily biodegradable in water.</th>
</tr>
</thead>
</table>

Bioaccumulative Potential

<table>
<thead>
<tr>
<th>Sodium nitrate (7631-99-4)</th>
<th>Not expected to bioaccumulate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate (6484-52-2)</td>
<td>No bioaccumulation expected.</td>
</tr>
</tbody>
</table>

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

Toxicity Not classified

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Disposal must comply with Federal, State and local regulations. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any explosive material.
### SECTION 14 - TRANSPORT INFORMATION

#### 14.1 In Accordance with DOT
- **Proper Shipping Name**: EXPLOSIVE, BLASTING, TYPE E or Agent blasting, Type E
- **Hazard Class**: 1.5D
- **Identification Number**: UN0332
- **Label Codes**: 1.5D
- **Packing Group**: II
- **ERG Number**: 140

#### 14.2 In Accordance with IMDG
- **Proper Shipping Name**: EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)
- **Hazard Class**: 1.5D
- **Identification Number**: UN0332
- **Label Codes**: 1.5D, EmS-No. (Fire): F-B, EmS-No. (Spillage): S-Y

#### 14.3 In Accordance with IATA
- **Proper Shipping Name**: AGENT, BLASTING TYPE E
- **Identification Number**: UN0332
- **Hazard Class**: 1
- **Label Codes**: 1.5D
- **ERG Code (IATA)**: 1L

#### 14.4 In Accordance with TDG
- **Proper Shipping Name**: EXPLOSIVE, BLASTING, TYPE E
- **Packing Group**: II
- **Hazard Class**: 1.5D
- **Identification Number**: UN0332
- **Label Codes**: 1.5D

### SECTION 15 - REGULATORY INFORMATION

**US Federal Regulations**
- Packaged Emulsion Explosives
- Bureau of Alcohol Tobacco & Firearms (BATF)
- Department of Transportation (DOT)
- Mine Safety & Health Administration (MSHA)
Canadian Regulations

Packaged Emulsions

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada.</th>
</tr>
</thead>
</table>

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

<table>
<thead>
<tr>
<th>Revision date</th>
<th>03/18/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Information</td>
<td>This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.</td>
</tr>
</tbody>
</table>

GHS Full Text Phrases:

<table>
<thead>
<tr>
<th>Expl. 1.5</th>
<th>Explosive Category 1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>H205</td>
<td>May mass explode in fire</td>
</tr>
</tbody>
</table>

Disclaimer

Party Responsible for the Preparation of This Document
Orica USA Phone Number: 1-303-268-5000

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North America GHS US 2012 & WHMIS