SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

Product Identifier
Product Name: OSX 8 Z
Product Code: 5001

Intended Use of the Product
Used for initiation of explosive mixtures. For professional use only.

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
www.oricaminingservices.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

Emergency Telephone Number
Emergency number : 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: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture
Classification (GHS-US)
Expl. 1.1          H201
Acute Tox. 3 (Oral) H301
Acute Tox. 3 (Dermal) H311
Acute Tox. 3 (Inhalation:dust,mist) H331
Resp. Sens. 1      H334
STOT RE 2          H373

Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US) :

Signal Word (GHS-US) : Danger
Hazard Statements (GHS-US) : H201 - Explosive; mass explosion hazard
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks - No smoking.
P240 - Ground/bond container and receiving equipment.
P250 - Do not subject to friction, grinding, shock.
P260 - Do not breathe dust, fume.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
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P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, protective clothing, protective gloves.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311 - Call a POISON CENTER or doctor.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P314 - Get medical advice and attention if you feel unwell.
P321 - Specific treatment (see Section 4).
P330 - If swallowed, rinse mouth.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P370+P380 - In case of fire: Evacuate area.
P373 - Explosion risk in case of fire.
P372 - DO NOT fight fire when fire reaches explosives.
P391 - Collect spillage.
P401 - Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR part 555.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards
Aquatic Chronic 2
H411 - Toxic to aquatic life with long lasting effects
P273 - Avoid release to the environment

Ingestion may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and, possibly shock.

Unknown Acute Toxicity (GHS-US)  Not applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentaerythrite tetranitrate</td>
<td>(CAS No) 78-11-5</td>
<td>40 - 70</td>
<td>Unst. Expl., H200</td>
</tr>
<tr>
<td>2,4,6-Trinitrotoluene</td>
<td>(CAS No) 118-96-7</td>
<td>30 - 60</td>
<td>Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT RE 2, H373 Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>Subtilisins (proteolytic enzymes)</td>
<td>(CAS No) 9014-01-1</td>
<td>&lt; 0.1</td>
<td>Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 STOT SE 3, H335</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head positioned to avoid breathing in of vomit, rinse mouth and have victim drink plenty of water. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects Both Acute and Delayed

General: Toxic if swallowed, in contact with skin or if inhaled.

Inhalation: Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Contact: Toxic in contact with skin.

Eye Contact: May cause eye irritation.

Ingestion: Toxic if swallowed.

Chronic Symptoms: Inhalation may cause allergic respiratory reaction with asthma-like symptoms and difficulty breathing. May cause damage to organs through prolonged or repeated exposure.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. Causes methemoglobinemia – emergency response should treat appropriately, such as by intravenous administration of methylene blue.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Water may be applied through fixed extinguishing system (sprinklers) as long as people need not be present for the system to operate.

Unsuitable Extinguishing Media: DO NOT FIGHT FIRES INVOLVING EXPLOSIVES. Smothering this product could lead to decomposition and explosion. This product is more sensitive to detonation if contaminated with organic or oxidizable material or if heated while confined.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Explosive.

Explosion Hazard: This product is an explosive with mass detonation hazard.

Reactivity: Reacts violently with many chemicals causing fire and explosion hazard.

Advice for Firefighters

Precautionary Measures Fire: This product is an explosive with mass detonation hazard. DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS.

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRE. Immediately evacuate all personnel from the area to a safe distance. Guard against re-entry. Thermal decomposition can lead to release of irritating gases and vapors.

Protection During Firefighting: When controlling fire before involvement of explosives, fire-fighters should wear positive pressure self-containing breathing apparatus (SCBA) and full turnout gear.


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: Do not get in eyes, on skin, or on clothing. Do not breathe dust or fumes. Keep away from heat, sparks, open flames, hot surfaces – No smoking. Eliminate every possible source of ignition. Evacuate danger area.
**For Non-Emergency Personnel**

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

**Emergency Procedures:** Evacuate danger area.

**For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Evacuate unnecessary personnel. Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

**Environmental Precautions**

Prevent entry to sewers and public waters. Hazardous waste due to potential risk of explosion.

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

**For Containment:** Absorb and/or contain spill with inert material, then place in suitable container.

**Methods for Cleaning Up:** Use only non-sparking tools. Be careful to avoid shock, friction, and contact with grit. Collect product for recovery or disposal. For release to land, contain discharge by constructing dykes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Collect contaminated soil and water, and absorbent for proper disposal. Notify applicable government authority if release is reportable or could adversely affect the environment.

**Reference to Other Sections**

See heading 8, Exposure Controls and Personal Protection.

---

**SECTION 7: HANDLING AND STORAGE**

**Precautions for Safe Handling**

**Hygiene Measures:** This product is an explosive and should only be used under the supervision of trained and licensed personnel. 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.

**Conditions for Safe Storage, Including Any Incompatibilities**

**Technical Measures:** Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555.

**Storage Conditions:** Store under moderate temperatures recommended by a technical services representative. Store under dry conditions in a well ventilated magazine that has been approved for either detonator storage or explosive storage. Do NOT store explosives in a detonator magazine or detonators in an explosive magazine. Keep away from heat, spark and flames. Keep containers closed. Explosives should be protected from physical damage; separated from oxidizing materials, combustibles, and sources of heat. Isolate from incompatibles. Ideal storage temperature: 10-27°C (50-80°F).

**Special Rules on Packaging:** Keep only in the original container.

**Shelf Life:** 5 years from date of manufacture.

**Specific End Use(s)**

Used for initiation of explosive mixtures. For professional use only.

---

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control Parameters**

<table>
<thead>
<tr>
<th>Substance</th>
<th>USA ACGIH TWA (mg/m³)</th>
<th>USA OSHA (mg/m³)</th>
<th>USA NIOSH TWA (mg/m³)</th>
<th>USA IDLH (mg/m³)</th>
<th>Alberta OEL TWA (mg/m³)</th>
<th>British Columbia OEL TWA (mg/m³)</th>
<th>Manitoba OEL TWA (mg/m³)</th>
<th>New Brunswick OEL TWA (mg/m³)</th>
<th>Newfoundland &amp; Labrador OEL TWA (mg/m³)</th>
<th>Nova Scotia OEL TWA (mg/m³)</th>
<th>Nunavut OEL Ceiling (mg/m³)</th>
<th>Northwest Territories OEL Ceiling (mg/m³)</th>
<th>Ontario OEL TWA (mg/m³)</th>
<th>Prince Edward Island OEL TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4,6-Trinitrotoluene (118-96-7)</td>
<td>0.1 mg/m³</td>
<td>1.5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>500 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>0.1 mg/m³</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Province</th>
<th>OEL VEMP (mg/m³)</th>
<th>OEL STEL (mg/m³)</th>
<th>OEL TWA (mg/m³)</th>
<th>OEL Ceiling (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Québec</td>
<td>0.5 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>0.3 mg/m³</td>
<td></td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Yukon</td>
<td>0.5 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Subtilisans (proteolytic enzymes) (9014-01-1)**

<table>
<thead>
<tr>
<th>Region</th>
<th>OEL Ceiling (mg/m³)</th>
<th>ACGIH Ceiling (mg/m³)</th>
<th>NIOSH REL (STEL) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Manitoba</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>New Brunswick</td>
<td></td>
<td>0.00006 mg/m³</td>
<td>(proteolytic enzymes)</td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nunavut</td>
<td></td>
<td>0.00006 mg/m³</td>
<td>(Proteolytic enzymes)</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td></td>
<td>0.00006 mg/m³</td>
<td>(Proteolytic enzymes)</td>
</tr>
<tr>
<td>Ontario</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Québec</td>
<td></td>
<td>0.00006 mg/m³</td>
<td>(Proteolytic enzymes)</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td></td>
<td>0.00006 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Yukon</td>
<td></td>
<td>0.00006 mg/m³</td>
<td>(Proteolytic enzymes)</td>
</tr>
</tbody>
</table>

**Exposure Controls**

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Proper grounding procedures to avoid static electricity should be followed. Product to be handled in a closed system and under strictly controlled conditions. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Gloves. Protective clothing. Dust/aerosol mask. Safety glasses.

**Materials for Protective Clothing:** Wear fire/flame resistant/retardant clothing.

**Hand Protection:** Wear chemically resistant protective gloves.

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

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

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

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on Basic Physical and Chemical Properties**

- **Physical State:** Solid
- **Appearance:** Tan to Brown
- **Odor:** Not available
- **Odor Threshold:** Not available
- **pH:** Not available
- **Relative Evaporation Rate (butylacetate=1):** Not available
- **Melting Point:** 80 °C (176 °F)
- **Freezing Point:** Not available
- **Boiling Point:** Not available
- **Flash Point:** Not available
- **Auto-ignition Temperature:** Not available
- **Decomposition Temperature:** 70 °C (158 °F). PETN explodes at 190 - 210 °C (374 - 410 °F).
- **Flammability (solid, gas):** Not available
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Lower Flammable Limit: Not available
Upper Flammable Limit: Not available
Vapor Pressure: Not available
Relative Vapor Density at 20 °C: Not available
Relative Density: 1.5 - 1.7 (water = 1)
Specific Gravity: 1.5 - 1.7
Solubility: Water: Negligible
Log Pow: Not available
Log Kow: Not available
Viscosity, Kinematic: Not available
Viscosity, Dynamic: Not available
Explosion Data – Sensitivity to Mechanical Impact: Not available
Explosion Data – Sensitivity to Static Discharge: Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Reacts violently with many chemicals causing fire and explosion hazard.
Chemical Stability: Can explode from impact, heat or friction. PETN explodes at 190 - 210 °C (374 - 410 °F). Stable up to approximately 70 °C (158 °F).
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Keep away from open flames, hot surfaces and sources of ignition. May explode from heat, shock, friction or contamination.
Incompatible Materials: Strong acids, strong bases, strong oxidizers.
Hazardous Decomposition Products: Carbon oxides (CO, CO2). Nitrogen oxides. Sulfur compounds. Decomposition may be explosive.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product
Acute Toxicity: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Not classified
Respiratory or Skin Sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not available
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure.
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/Injuries After Skin Contact: Toxic in contact with skin.
Symptoms/Injuries After Eye Contact: May cause eye irritation.
Symptoms/Injuries After Ingestion: Toxic if swallowed.
Chronic Symptoms: Inhalation may cause allergic respiratory reaction with asthma-like symptoms and difficulty breathing. May cause damage to organs through prolonged or repeated exposure.

Information on Toxicological Effects - Ingredient(s)
LD50 and LC50 Data
Subtilisins (proteolytic enzymes) (9014-01-1)
LD50 Oral Rat: 1.8 g/kg
ATE (oral): 1800.000 mg/kg
2,4,6-Trinitrotoluene (118-96-7)
IARC Group: 3
### SECTION 12: ECOLOGICAL INFORMATION

**Toxicity** Toxic to aquatic life with long lasting effects

<table>
<thead>
<tr>
<th>Subtilisins (proteolytic enzymes) (9014-01-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 Fish 1</td>
<td>14.6 mg/l</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>0.306 mg/l</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>0.513 (0.513 - 1.48) mg/l</td>
</tr>
<tr>
<td>NOEC chronic fish</td>
<td>2 mg/l</td>
</tr>
</tbody>
</table>

**Persistence and Degradability** Not available

**Bioaccumulative Potential**

<table>
<thead>
<tr>
<th>2,4,6-Trinitrotoluene (118-96-7)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>1.6 (at 20 °C)</td>
</tr>
</tbody>
</table>

**Mobility in Soil** Not available

**Other Adverse Effects**

**Other Information:** Avoid release to the environment.

### SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Destroy and dispose of in accordance with applicable local, state, provincial, territorial, federal and international regulations. Comply with regulations as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR part 555.

**Ecology – Waste Materials:** Hazardous waste due to toxicity.

### SECTION 14: TRANSPORT INFORMATION

**In Accordance With ICAO/IATA/DOT/TDG**

**UN Number**

UN-No.(DOT): 0042

**UN Proper Shipping Name**

**DOT Proper Shipping Name** : Boosters without detonator

**Hazard Labels (DOT)** : 1.1D - Explosive substances and articles

**Packing Group (DOT)** : II - Medium Danger

**Additional Information**

**Emergency Response Guide (ERG) Number** : 112

### SECTION 15: REGULATORY INFORMATION

**US Federal Regulations**

<table>
<thead>
<tr>
<th>OSX 8 Z</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
<td>Immediate (acute) health hazard</td>
</tr>
<tr>
<td></td>
<td>Delayed (chronic) health hazard</td>
</tr>
<tr>
<td></td>
<td>Sudden release of pressure hazard</td>
</tr>
<tr>
<td></td>
<td>Fire hazard</td>
</tr>
</tbody>
</table>

2,4,6-Trinitrotoluene (118-96-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Pentaerythrite tetranitrate (78-11-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**EPA TSCA Regulatory Flag**

T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

**Subtilisins (proteolytic enzymes) (9014-01-1)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory
### Amylase, \(\alpha\) (9000-90-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### US State Regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4,6-Trinitrotoluene (118-96-7)</td>
<td>WARNING: This product contains chemicals known to the State of California to cause cancer.</td>
</tr>
</tbody>
</table>

#### 2,4,6-Trinitrotoluene (118-96-7)

<table>
<thead>
<tr>
<th>State</th>
<th>Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>Proposition 65 - Carcinogens List</td>
</tr>
</tbody>
</table>

#### Pentaerythrite tetranitrate (78-11-5)

<table>
<thead>
<tr>
<th>State</th>
<th>Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - New Jersey</td>
<td>Right to Know Hazardous Substance List</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Subtilisins (proteolytic enzymes) (9014-01-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - Michigan - Occupational Exposure Limits - STELs</td>
</tr>
<tr>
<td>U.S. - Minnesota - Permissible Exposure Limits - STELs</td>
</tr>
<tr>
<td>U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour</td>
</tr>
<tr>
<td>U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual</td>
</tr>
<tr>
<td>U.S. - Tennessee - Occupational Exposure Limits - STELs</td>
</tr>
<tr>
<td>U.S. - Texas - Effects Screening Levels - Long Term</td>
</tr>
<tr>
<td>U.S. - Texas - Effects Screening Levels - Short Term</td>
</tr>
<tr>
<td>U.S. - Washington - Permissible Exposure Limits - STELs</td>
</tr>
</tbody>
</table>

### Canadian Regulations

**OSX 8 Z**

<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>
<tbody>
<tr>
<td>Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects</td>
<td></td>
</tr>
<tr>
<td>Class B Division 6 - Reactive Flammable Material</td>
<td></td>
</tr>
<tr>
<td>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects</td>
<td></td>
</tr>
</tbody>
</table>

2,4,6-Trinitrotoluene (118-96-7)

- Listed on the Canadian DSL (Domestic Substances List) inventory.
- Listed on the Canadian Ingredient Disclosure List

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class D Division 2 Subdivision B - Toxic material causing other toxic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class F - Dangerously Reactive Material</td>
</tr>
</tbody>
</table>

Pentaerythrite tetranitrate (78-11-5)

- Listed on the Canadian DSL (Domestic Substances List) inventory.

<table>
<thead>
<tr>
<th>Subtilisins (proteolytic enzymes) (9014-01-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the Canadian DSL (Domestic Substances List) inventory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects</th>
</tr>
</thead>
</table>

Amylase, .alpha. (9000-90-2)

- Listed on the Canadian DSL (Domestic Substances List) inventory.

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

**SECTION 16: OTHER INFORMATION**

- Revision date: 01/16/2014
- Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**GHS Full Text Phrases:**

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Dermal)</th>
<th>Acute toxicity (dermal) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Inhalation)</td>
<td>Acute toxicity (inhalation) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 3 (Inhalation: dust,mist)</td>
<td>Acute toxicity (inhalation: dust,mist) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>Acute toxicity (oral) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Expl. 1.1</td>
<td>Explosive Category 1.1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Resp. Sens. 1</td>
<td>Respiratory sensitisation Category 1</td>
</tr>
</tbody>
</table>
OSX 8 Z
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity (repeated exposure) Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>Unst. Expl</td>
<td>Unstable explosives</td>
</tr>
<tr>
<td>H200</td>
<td>Unstable explosives</td>
</tr>
<tr>
<td>H201</td>
<td>Explosive; mass explosion hazard</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled</td>
</tr>
<tr>
<td>H334</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H373</td>
<td>May cause damage to organs through prolonged or repeated exposure</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

**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