

# Safety Data Sheet



OPTIMIZED FOR YOUR TARGET™

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

### 1.1 Product identifier

**Product Name** • Range AR

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

**Relevant identified use(s)** • Long range shooting, target shooting

### 1.3 Details of the supplier of the safety data sheet

**Manufacturer** • Barnes Bullets  
PO Box 620  
Mona, UT 84645  
United States  
www.barnesbullets.com  
email@barnesbullets.com

**Telephone (General)** • (435) 856-1000

### 1.4 Emergency telephone number

**Manufacturer** • (435) 856-1000

## Section 2: Hazards Identification

### EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

### 2.1 Classification of the substance or mixture

**CLP** • Explosives 1.4 - H204  
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335  
Reproductive Toxicity 1A - H360

### 2.2 Label Elements

CLP

#### DANGER



**Hazard statements** • H204 - Fire or projection hazard  
H335 - May cause respiratory irritation  
H360 - May damage fertility or the unborn child.

### Precautionary statements

**Prevention** • P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.

P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.  
 P240 - Ground and/or bond container and receiving equipment.  
 P250 - Do not subject to grinding/shock/friction.  
 P261 - Avoid breathing dust or fume.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P280 - Wear face protection .  
 P281 - Use personal protective equipment as required.

**Response** • P370+P380 - In case of fire: Evacuate area.  
 P373 - DO NOT fight fire when fire reaches explosives.  
 P374 - Fight fire with normal precautions from a reasonable distance.  
 P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P312 - Call a POISON CENTER or doctor/physician if you feel unwell.  
 P308+P313 - IF exposed or concerned: Get medical advice/attention.

**Storage/Disposal** • P401 - Store in accordance with local, regional, national, and/or international regulations.  
 P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
 P405 - Store locked up.  
 P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## 2.3 Other Hazards

### CLP

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

## United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

## 2.1 Classification of the substance or mixture

### OSHA HCS 2012

- Explosives 1.4  
 Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation  
 Reproductive Toxicity 1A  
 Hazards Not Otherwise Classified - Health Hazard - Metal fume fever

## 2.2 Label elements

### OSHA HCS 2012

### DANGER



**Hazard statements** • Fire or projection hazard  
 May cause respiratory irritation  
 May damage fertility or the unborn child.

### Precautionary statements

**Prevention** • Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.  
 Ground and/or bond container and receiving equipment.  
 Do not subject to grinding/shock/friction.  
 Avoid breathing dust or fume.  
 Use only outdoors or in a well-ventilated area.  
 Wear protective gloves/protective clothing/eye protection/face protection.

**Response** • In case of fire: Evacuate area.  
 DO NOT fight fire when fire reaches explosives.  
 Fight fire with normal precautions from a reasonable distance.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.  
IF exposed or concerned: Get medical advice/attention.

- Storage/Disposal**
- Store in accordance with local, regional, national, and/or international regulations. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## 2.3 Other hazards

### OSHA HCS 2012

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Canada

According to: WHMIS

## 2.1 Classification of the substance or mixture

### WHMIS

- Other Toxic Effects - D2A

## 2.2 Label elements

### WHMIS



- Other Toxic Effects - D2A

## 2.3 Other hazards

### WHMIS

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## Section 3 - Composition/Information on Ingredients

### 3.1 Substances

- Material does not meet the criteria of a substance.

### 3.2 Mixtures

| Composition   |  |                  |           |   |          |
|---------------|--|------------------|-----------|---|----------|
| Chemical Name | Identifiers  | %                | LD50/LC50 | Classifications According to Regulation/Directive   | Comments |
| Zinc          | CAS:7440-66-6<br>EC<br>Number:231-175-3<br>EU Index:030-001-00-1 | 50%<br>TO<br>70% | NDA       | EU CLP: Not Classified<br>OSHA HCS 2012: Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever | NDA      |
| Copper        | CAS:7440-50-8<br>EC<br>Number:231-159-6                          | 25%<br>TO<br>45% | NDA       | EU CLP: STOT SE 3: Resp. Irrit., H335;<br>OSHA HCS 2012: Comb. Dust; STOT SE 3: Resp. Irrit.                            | NDA      |

|  |  |                 |  |   |     |
|--|--|-----------------|--|---|-----|
| Nitrate cellulose                        | <b>CAS:</b> 9004-70-0<br><b>EU Index:</b> 603-037-00-6                               | 7%<br>TO<br>16% | Ingestion/Oral-Rat<br>LD50 • >5 g/kg   | <b>EU CLP:</b> Expl. 1.1, H201<br><b>OSHA HCS 2012:</b> Expl. 1.1   | NDA |
| Nitroglycerin                            | <b>CAS:</b> 55-63-0<br><b>EC Number:</b> 200-240-8                                   | 0%<br>TO<br>3%  | Ingestion/Oral-Rat<br>LD50 • 105 mg/kg<br>Skin-Rabbit LD50 • >280 mg/kg  | <b>EU CLP:</b> Annex VI, Table 3.1: Expl. 1.1, H201; Acute Tox. 2 *, H330; Acute Tox. 1, H310; Acute Tox. 2 *, H300; STOT RE 2 *, H373; Aquatic Chronic 2, H411<br><b>OSHA HCS 2012:</b> Expl. 1.1; Acute Tox. 3 (Orl); Eye Irrit. 2; Skin Sens. 1  | NDA |
| Toluene, 2,4-dinitro-                    | <b>CAS:</b> 121-14-2<br><b>EC Number:</b> 204-450-0<br><b>EU Index:</b> 609-007-00-9 | 0%<br>TO<br>2%  | Ingestion/Oral-Rat<br>LD50 • 268 mg/kg   | <b>EU CLP:</b> Annex VI, Table 3.1: Carc. 1B, H350; Muta. 2, H341; Repr. 2, H361f ***; Acute Tox. 3 *, H331; Acute Tox. 3 *, H311; Acute Tox. 3 *, H301; STOT RE 2 *, H373 **; Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br><b>OSHA HCS 2012:</b> Comb. Dust; Acute Tox. 4 (Orl); STOT RE 2 (Kidney); Carc. 2; Muta. 2 | NDA |
| Dibutyl phthalate                        | <b>CAS:</b> 84-74-2<br><b>EC Number:</b> 201-557-4<br><b>EU Index:</b> 607-318-00-4  | 0%<br>TO<br>1%  | Ingestion/Oral-Rat<br>LD50 • 7499 mg/kg<br>Inhalation-Rat<br>LC50 • 4250 mg/m <sup>3</sup><br>Skin-Rabbit LD50 • >20 mL/kg | <b>EU CLP:</b> Annex VI, Table 3.1: Repr. 1B, H360Df (Oral); Aquatic Acute 1, H400 (M=1)<br><b>OSHA HCS 2012:</b> Repr. 1B (Orl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (Orl, Inhl)   | NDA |
| Diphenylamine                            | <b>CAS:</b> 122-39-4<br><b>EC Number:</b> 204-539-4<br><b>EU Index:</b> 612-026-00-5 | < 1%            | Ingestion/Oral-Rat<br>LD50 • 1120 mg/kg  | <b>EU CLP:</b> Annex VI, Table 3.1: Acute Tox. 3 *, H331; Acute Tox. 3 *, H311; Acute Tox. 3 *, H301; STOT RE 2 *, H373 **; Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br><b>OSHA HCS 2012:</b> Carc. 2; Muta. 2; Repr. 2; Acute Tox. 3, orl;   | NDA |
| Carbon                                   | <b>CAS:</b> 7440-44-0<br><b>EC Number:</b> 231-153-3                                 | < 1%            | NDA  | <b>EU CLP:</b> Not Classified<br><b>OSHA HCS 2012:</b> Comb. Dust   | NDA |
| Barium(II) nitrate (1:2)                 | <b>CAS:</b> 10022-31-8<br><b>EINECS:</b> 233-020-5                                   | < 0.2%          | Ingestion/Oral-Rat<br>LD50 • 355 mg/kg   | <b>EU CLP:</b> Ox. Sol. 2, H272; STOT RE 1, H372; Acute Tox. 4, H302; Eye Irrit. 2, H319<br><b>OSHA HCS 2012:</b> Ox. Sol. 2; STOT RE 1 (PNS); Acute Tox. 4 (Orl); Eye Irrit. 2   | NDA |
| 2,4,6-Trinitro-1,3-benzenediol lead salt | <b>CAS:</b> 15245-44-0<br><b>EC Number:</b> 239-290-0                                | < 0.2%          | NDA  | <b>EU CLP:</b> Annex VI, Table 3.1: Expl. 1.1., H201; Repr. 1A, H306Df; Acute Tox. 4 *, H302; STOT RE 2 *, H373***; Aquatic Acute 1, H400; Aquatic Chronic 1, H410<br><b>OSHA HCS 2012:</b> Expl. 1.1; Repr. 1A; STOT RE 1 (Liver, Kidney, Blood, Nervous System);  | NDA |
| Antimony trisulfide                      | <b>CAS:</b> 1345-04-6<br><b>EINECS:</b> 215-713-4                                    | < 0.1%          | NDA  | <b>EU CLP:</b> Community workplace exposure limit<br><b>OSHA HCS 2012:</b> Exposure limits  | NDA |

See Section 16 for full text of H-statements.

## Section 4 - First Aid Measures

### 4.1 Description of first aid measures

#### Inhalation

- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

#### Skin

- First aid is not expected to be necessary if material is used under ordinary conditions

and as recommended. Wash skin with soap and water. Get medical attention if symptoms occur.

- Eye**
- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Remove contact lenses if worn. Flush eyes with water for at least 15 minutes. Get medical attention if symptoms occur.
- Ingestion**
- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Give plenty of water to drink. Induce vomiting (only in conscious persons) Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

#### 4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

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

- Notes to Physician**
- No specific actions or treatments recommended related to exposure to this material.

## Section 5 - Firefighting Measures

### 5.1 Extinguishing media

**Suitable Extinguishing Media** • Water, carbon dioxide, dry chemical, earth.

**Unsuitable Extinguishing Media** • No data available

### 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**

- May ignite if heated above 130°C  
Will ignite when exposed to flame and high temperatures.  
Be cautious of low-energy fragments.  
Packages bearing the 1.4S label or packages containing material classified as 1.4S are designed or packaged in such a manner that when involved in a fire, may burn vigorously with localized detonations and projection of fragments.  
Effects are usually confined to immediate vicinity of packages.

**Hazardous Combustion Products**

- No data available

### 5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Flood fire with water to fight fire and cool shells. If no water is available, use carbon dioxide, dry chemical or earth.  
Fight fire with normal precautions from a reasonable distance.

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions**

- Do not walk through spilled material. Do not strike or crush the rounds.

**Emergency Procedures**

- Eliminate all ignition sources. If fire threatens cargo area containing packages bearing the 1.4S label or packages containing material classified as 1.4S, consider isolating at least 15 meters (50 feet) in all directions. In fire situations move people out of line of site of the scene and away from windows. Use normal clean up procedures.

### 6.2 Environmental precautions

- No special environmental precautions necessary.

### 6.3 Methods and material for containment and cleaning up

**Containment/Clean-up Measures**

- Use clean nonsparking tools to collect material.  
Carefully shovel or sweep up spilled material and place in suitable container.

### 6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

**Section 7 - Handling and Storage**

**7.1 Precautions for safe handling**

**Handling**

- Handle with care. Do not strike or crush the rounds. Avoid breathing dust or fume. Use personal protective equipment as required. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

**7.2 Conditions for safe storage, including any incompatibilities**

**Storage**

- Keep only in the original container. Store in a cool, dry, well-ventilated place. Keep away from sources of ignition – No Smoking. Do not subject to mechanical shock. Keep out of reach of children. This product must not be stored with acids, strong oxidizers or caustics.

**7.3 Specific end use(s)**

- Refer to Section 1.2 - Relevant identified uses.

**Section 8 - Exposure Controls/Personal Protection**

**8.1 Control parameters**

| Exposure Limits/Guidelines                  |          |   |   |   |
|---|----------|---|---|---|
|   | Result   | ACGIH   | NIOSH   | OSHA  |
| Nitroglycerin<br>(55-63-0)                  | Ceilings | Not established   | Not established   | 0.2 ppm Ceiling; 2 mg/m <sup>3</sup> Ceiling                              |
|   | TWAs     | 0.05 ppm TWA  | Not established   | Not established   |
|   | STELs    | Not established   | 0.1 mg/m <sup>3</sup> STEL  | Not established   |
| Dibutyl phthalate<br>(84-74-2)              | TWAs     | 5 mg/m <sup>3</sup> TWA   | 5 mg/m <sup>3</sup> TWA   | 5 mg/m <sup>3</sup> TWA   |
| Antimony trisulfide                         | TWAs     | 0.5 mg/m <sup>3</sup> TWA (as Sb)<br><i>as Antimony compounds</i> | 0.5 mg/m <sup>3</sup> TWA (as Sb)<br><i>as Antimony compounds</i>         | 0.5 mg/m <sup>3</sup> TWA (as Sb)<br><i>as Antimony compounds</i>         |
| 2,4,6-Trinitro-1,3-benzenediol lead salt    | TWAs     | Not established   | 0.050 mg/m <sup>3</sup> TWA (as Pb)<br><i>as Lead compounds</i>           | Not established   |
| Barium(II) nitrate<br>(1:2)<br>(10022-31-8) | TWAs     | Not established   | 0.5 mg/m <sup>3</sup> TWA (as Ba)   | Not established   |
| Diphenylamine<br>(122-39-4)                 | TWAs     | 10 mg/m <sup>3</sup> TWA  | 10 mg/m <sup>3</sup> TWA  | Not established   |
| Copper<br>(7440-50-8)                       | TWAs     | 0.2 mg/m <sup>3</sup> TWA (fume)                                  | 1 mg/m <sup>3</sup> TWA (dust and mist); 0.1 mg/m <sup>3</sup> TWA (fume) | 0.1 mg/m <sup>3</sup> TWA (fume); 1 mg/m <sup>3</sup> TWA (dust and mist) |

**8.2 Exposure controls**

**Engineering Measures/Controls**

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment**

**Respiratory**

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**

- Wear safety glasses.

- Skin/Body**
  - Environmental Exposure Controls**
  - Additional Protection Measures**
- Wear protective clothing
  - Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.
  - Hearing protection recommended when firing rounds.

**Key to abbreviations**

ACGIH = American Conference of Governmental Industrial Hygiene

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

**Section 9 - Physical and Chemical Properties****9.1 Information on Physical and Chemical Properties**

| <b>Material Description</b>         |              |                              |                    |
|-------------------------------------|--------------|------------------------------|--------------------|
| Physical Form                       | Solid        | Appearance/Description       | Solid              |
| Color                               | Variable     | Odor                         | Data lacking       |
| Odor Threshold                      | Data lacking |                              |                    |
| <b>General Properties</b>           |              |                              |                    |
| Boiling Point                       | Data lacking | Melting Point/Freezing Point | Data lacking       |
| Decomposition Temperature           | Data lacking | pH                           | Data lacking       |
| Specific Gravity/Relative Density   | Data lacking | Water Solubility             | Negligible < 0.1 % |
| Viscosity                           | Data lacking | Explosive Properties         | Data lacking       |
| Oxidizing Properties:               | Data lacking |                              |                    |
| <b>Volatility</b>                   |              |                              |                    |
| Vapor Pressure                      | Data lacking | Vapor Density                | Data lacking       |
| Evaporation Rate                    | Data lacking |                              |                    |
| <b>Flammability</b>                 |              |                              |                    |
| Flash Point                         | Data lacking | UEL                          | Data lacking       |
| LEL                                 | Data lacking | Autoignition                 | Data lacking       |
| Flammability (solid, gas)           | Data lacking |                              |                    |
| <b>Environmental</b>                |              |                              |                    |
| Octanol/Water Partition coefficient | Data lacking |                              |                    |

**9.2 Other Information**

- No additional physical and chemical parameters noted.

**Section 10: Stability and Reactivity****10.1 Reactivity**

- No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

- Stable under normal temperatures and pressures.

**10.3 Possibility of hazardous reactions**

- Hazardous polymerization will not occur.

## 10.4 Conditions to avoid

- Flames, sparks, percussion, shock, static, high temperatures (266°F or 130°C, or above)

## 10.5 Incompatible materials

- Acids, strong oxidizers and caustics.

## 10.6 Hazardous decomposition products

- No data available

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

| Components                        |            |  |
|-----------------------------------|------------|--|
| Copper (25% TO 45%)               | 7440-50-8  | <p><b>Acute Toxicity:</b> Ingestion/Oral-Mouse TDLo • 108 mg/kg; <i>Behavioral:</i><b>Tremor</b>; <i>Gastrointestinal:</i><b>Hypermotility, diarrhea</b>; <i>Gastrointestinal:</i><b>Nausea or vomiting</b>; Ingestion/Oral-Mouse TDLo • 158 mg/kg; <i>Kidney, Ureter, and Bladder:</i><b>Changes in tubules (including acute renal failure, acute tubular necrosis)</b>; Ingestion/Oral-Mouse TDLo • 232 mg/kg; <i>Kidney, Ureter, and Bladder:</i><b>Changes primarily in glomeruli</b>; <i>Blood:</i><b>Changes in spleen</b>; <i>Blood:</i><b>Changes in serum composition (e.g., TP, bilirubin cholesterol)</b>;</p> <p><b>Multi-dose Toxicity:</b> Ingestion/Oral-Rabbit TDLo • 3 g/kg 60 Day(s)-Continuous; <i>Cardiac:</i><b>Other changes</b>; <i>Liver:</i><b>Hepatitis (hepatocellular necrosis), zonal</b>; <i>Related to Chronic Data:</i><b>Death in the Other Multiple Dose data type field</b>;</p> <p><b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 1520 µg/kg (22W pre); <i>Reproductive Effects:</i><b>Specific Developmental Abnormalities:Musculoskeletal system</b>; Ingestion/Oral-Rat TDLo • 152 mg/kg (22W pre); <i>Reproductive Effects:</i><b>Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</b>; <i>Reproductive Effects:</i><b>Specific Developmental Abnormalities:Central nervous system</b>; Ingestion/Oral-Rat TDLo • 1210 µg/kg (35W pre); <i>Reproductive Effects:</i><b>Effects on Fertility:Pre-implantation mortality</b>; <i>Reproductive Effects:</i><b>Effects on Fertility:Post-implantation mortality</b>;</p> <p><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDLo • 10.08 mg/kg 12 Week(s)-Continuous; <i>Tumorigenic:</i><b>Carcinogenic by RTECS criteria</b>; <i>Lungs, Thorax, or Respiration:</i><b>Other changes</b></p> |
| Zinc (50% TO 70%)                 | 7440-66-6  | <p><b>Irritation:</b> Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation;</p> <p><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDLo • 12.6 mg/kg 46 Week(s)-Continuous; <i>Tumorigenic:</i><b>Carcinogenic by RTECS criteria</b>; <i>Gastrointestinal:</i><b>Tumors</b>; <i>Tumorigenic:</i><b>Facilitates action of known carcinogen</b></p>   |
| Barium(II) nitrate (1:2) (< 0.2%) | 10022-31-8 | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 355 mg/kg; Ingestion/Oral-Man TDLo • 83 mg/kg; <i>Peripheral Nerve and Sensation:</i><b>Paresthesia</b>; <i>Behavioral:</i><b>Muscle weakness</b>; <i>Nutritional and Gross Metabolic:</i><b>Changes in Chemistry or Temperature:K</b>;</p> <p><b>Irritation:</b> Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation</p>  |
| Nitroglycerin (0% TO 3%)          | 55-63-0    | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 105 mg/kg; <i>Behavioral:</i><b>Somnolence (general depressed activity)</b>; Ingestion/Oral-Woman TDLo • 5 mg/kg; <i>Behavioral:</i><b>General anesthetic</b>; <i>Cardiac:</i><b>Other changes</b>; <i>Kidney, Ureter, and Bladder:</i><b>Incontinence</b>; Skin-Rabbit LD50 • &gt;280 mg/kg;</p> <p><b>Irritation:</b> Eye-Rabbit • 0.1 mL; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation;</p> <p><b>Reproductive:</b> Skin-Rat TDLo • 3640 mg/kg (17-21D preg/21D post); <i>Reproductive Effects:</i><b>Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</b>; <i>Reproductive Effects:</i><b>Effects on Newborn:Viability index (e.g., # alive at day 4 per # born alive)</b>;</p> <p><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Rat TDLo • 240170 mg/kg 2 Year(s)-Intermittent; <i>Tumorigenic:</i><b>Equivocal tumorigenic agent by RTECS criteria</b>; <i>Liver:</i><b>Tumors</b>; <i>Tumorigenic:</i><b>Increased incidence of tumors in susceptible strains</b></p>   |
| Nitrate cellulose (7% TO 16%)     | 9004-70-0  | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • &gt;5 g/kg</p>   |
|                                   |            | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 7499 mg/kg; Ingestion/Oral-Human TDLo • 140 mg/kg; <i>Behavioral:</i><b>Hallucinations, distorted perceptions</b>; <i>Gastrointestinal:</i><b>Nausea or vomiting</b>; <i>Kidney, Ureter, and Bladder:</i><b>Other changes</b>; Ingestion/Oral-Rat TDLo • 52 mg/kg; <i>Behavioral:</i><b>Somnolence (general depressed activity)</b>; <i>Lungs, Thorax, or Respiration:</i><b>Dyspnea</b>; <i>Lungs, Thorax, or Respiration:</i><b>Respiratory depression</b>; Skin-Rabbit LD50 • &gt;20 mL/kg;</p>   |



|                                  |          |   |
|----------------------------------|----------|---|
| Dibutyl phthalate (0% TO 1%)     | 84-74-2  | <p><b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDLo • 3750 mg/kg 15 Day(s)-Intermittent; <b>Endocrine:Evidence of thyroid hypofunction;</b> Ingestion/Oral-Rat TDLo • 7500 mg/kg 15 Day(s)-Intermittent; <b>Liver:Changes in liver weight;</b> <b>Endocrine:Evidence of thyroid hypofunction;</b></p> <p><b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 23 mg/kg (15-22D preg/15D post); <b>Reproductive Effects:Specific Developmental Abnormalities:Urogenital system;</b> Ingestion/Oral-Rat TDLo • 3500 mg/kg (13-19D preg); <b>Reproductive Effects:Specific Developmental Abnormalities:Endocrine system;</b> Ingestion/Oral-Rat TDLo • 5000 mg/kg (14-18D preg); <b>Reproductive Effects:Effects on Embryo or Fetus:Fetal death;</b> Ingestion/Oral-Rat TDLo • 4000 mg/kg (6-15D preg); <b>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</b></p>   |
| Diphenylamine (< 1%)             | 122-39-4 | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 1120 mg/kg; <b>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Respiratory depression;</b> <b>Blood:Metheinglobincinia-Carboxyhemoglobin;</b> Skin-Rabbit LD50 • &gt;5000 mg/kg;</p> <p><b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDLo • 2400 mg/kg 3 Day(s)-Intermittent; <b>Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis); Kidney, Ureter, and Bladder:Interstitial nephritis; Kidney, Ureter, and Bladder:Other changes;</b> Ingestion/Oral-Rat TDLo • 25 mg/kg 30 Day(s)-Intermittent; <b>Gastrointestinal:Alteration in gastric secretion; Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis); Kidney, Ureter, and Bladder:Proteinuria;</b> <b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 7500 mg/kg (17-22D preg); <b>Reproductive Effects:Specific Developmental Abnormalities:Urogenital system</b></p>  |
| Toluene, 2,4-dinitro- (0% TO 2%) | 121-14-2 | <p><b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 268 mg/kg;</p> <p><b>Irritation:</b> Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation;</p> <p><b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDLo • 273 mg/kg 70 Day(s)-Intermittent; <b>Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</b></p> <p><b>Mutagen:</b> Unscheduled DNA synthesis • Ingestion/Oral-Rat • 35 mg/kg; Micronucleus test • Ingestion/Oral-Rat • 150 mg/kg 2 Day(s)-Intermittent;</p> <p><b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 2380 mg/kg (70D male); <b>Reproductive Effects:Paternal Effects:Spermatogenesis; Reproductive Effects:Paternal Effects:Prostate, seminal vesicle, Cowper's gland, accessory glands;</b> Ingestion/Oral-Rat TDLo • 8463 mg/kg (13W male); <b>Reproductive Effects:Paternal Effects:Spermatogenesis;</b></p> <p><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDLo • 10080 mg/kg 2 Year(s)-Continuous; <b>Tumorigenic:Carcinogenic by RTECS criteria; Kidney, Ureter, and Bladder:Kidney tumors;</b> Ingestion/Oral-Rat TDLo • 2620 mg/kg 78 Week(s)-Continuous; <b>Tumorigenic:Neoplastic by RTECS criteria; Skin and Appendages:Other:Tumors</b></p> |

| GHS Properties                | Classification  |
|-------------------------------|---|
| Respiratory sensitization     | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Serious eye damage/Irritation | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Acute toxicity                | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Aspiration Hazard             | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Carcinogenicity               | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Skin corrosion/Irritation     | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| Skin sensitization            | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
| STOT-RE                       | EU/CLP • Data lacking<br>OSHA HCS 2012 • Data lacking                                   |
|                               | EU/CLP • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation |

|                                  |   |
|----------------------------------|---|
| <b>STOT-SE</b>                   | <b>OSHA HCS 2012</b> • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation |
| <b>Toxicity for Reproduction</b> | <b>EU/CLP</b> • Toxic to Reproduction 1A<br><b>OSHA HCS 2012</b> • Toxic to Reproduction 1A           |
| <b>Germ Cell Mutagenicity</b>    | <b>EU/CLP</b> • Data lacking<br><b>OSHA HCS 2012</b> • Data lacking                                   |

## Potential Health Effects

### Inhalation

- Acute (Immediate)**
  - Inhalation of dust or fumes may cause irritation to nose, throat, upper respiratory tract and lungs. Irritation may lead to bronchitis, headache, lowering of blood pressure and weakness.
- Chronic (Delayed)**
  - No data available

### Skin

- Acute (Immediate)**
  - May cause allergic reaction (sensitization) in susceptible individuals.
- Chronic (Delayed)**
  - No data available

### Eye

- Acute (Immediate)**
  - Dust and fumes can irritate the eyes causing redness and discharge.
- Chronic (Delayed)**
  - No data available

### Ingestion

- Acute (Immediate)**
  - Ingestion is not anticipated to be a likely route of exposure to this product.
- Chronic (Delayed)**
  - No data available

### Carcinogenic Effects

- This product is not classified a carcinogen by IARC, OSHA, NTP or EPA. However, there are some components that are carcinogens according to these agencies.

| Carcinogenic Effects  |          |                              |
|-----------------------|----------|------------------------------|
|                       | CAS      | IARC                         |
| Toluene, 2,4-dinitro- | 121-14-2 | Group 2B-Possible Carcinogen |

- Reproductive Effects**
  - Repeated and prolonged exposure may cause reproductive effects.

#### Key to abbreviations

LD = Lethal Dose  
TC = Toxic Concentration  
TD = Toxic Dose

## Section 12 - Ecological Information

### 12.1 Toxicity

- Material data lacking.

### 12.2 Persistence and degradability

- Material data lacking.

### 12.3 Bioaccumulative potential

- Material data lacking.

### 12.4 Mobility in Soil

- Material data lacking.

### 12.5 Results of PBT and vPvB assessment

- PBT and vPvB assessment has not been conducted.

## 12.6 Other adverse effects

- No studies have been found.

## Section 13 - Disposal Considerations

### 13.1 Waste treatment methods

#### Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

#### Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

|           | 14.1 UN number | 14.2 UN proper shipping name | 14.3 Transport hazard class(es) | 14.4 Packing group | 14.5 Environmental hazards |
|-----------|----------------|------------------------------|---------------------------------|--------------------|----------------------------|
| DOT       | UN0014         | Cartridges, Small Arms       | 1.4S                            | II                 | NDA                        |
| TDG       | UN0014         | CARTRIDGES, SMALL ARMS       | 1.4S                            | II                 | NDA                        |
| IMO/IMDG  | UN0014         | CARTRIDGES, SMALL ARMS       | 1.4S                            | II                 | NDA                        |
| IATA/ICAO | UN0014         | Cartridges, Small Arms       | 1.4S                            | II                 | NDA                        |

#### 14.6 Special precautions for user

- None specified.

#### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Data lacking.

## Section 15 - Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### SARA Hazard Classifications

- Acute, Chronic, Pressure(Sudden Release of)

| Inventory                                |            |            |             |           |           |      |
|--|------------|------------|-------------|-----------|-----------|------|
| Component                                | CAS        | Canada DSL | Canada NDSL | EU EINECS | EU ELNICS | TSCA |
| 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Yes        | No          | Yes       | No        | Yes  |
| Antimony trisulfide                      | 1345-04-6  | Yes        | No          | Yes       | No        | Yes  |
| Barium(II) nitrate (1:2)                 | 10022-31-8 | Yes        | No          | Yes       | No        | Yes  |
| Carbon                                   | 7440-44-0  | Yes        | No          | Yes       | No        | Yes  |
| Copper                                   | 7440-50-8  | Yes        | No          | Yes       | No        | Yes  |
| Dibutyl phthalate                        | 84-74-2    | Yes        | No          | Yes       | No        | Yes  |
| Diphenylamine                            | 122-39-4   | Yes        | No          | Yes       | No        | Yes  |
| Nitrate cellulose                        | 9004-70-0  | Yes        | No          | No        | No        | Yes  |
| Nitroglycerin                            | 55-63-0    | Yes        | No          | Yes       | No        | Yes  |

|                       |           |     |    |     |    |     |
|-----------------------|-----------|-----|----|-----|----|-----|
| Toluene, 2,4-dinitro- | 121-14-2  | Yes | No | Yes | No | Yes |
| Zinc                  | 7440-66-6 | Yes | No | Yes | No | Yes |

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

|  |            |   |
|--|------------|---|
| • Nitroglycerin                            | 55-63-0    | Not Listed  |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed  |
| • Carbon                                   | 7440-44-0  | Uncontrolled product according to WHMIS classification criteria |
| • Antimony trisulfide                      | 1345-04-6  | Uncontrolled product according to WHMIS classification criteria |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | D1A, D2A, D2B   |
| • Copper                                   | 7440-50-8  | Uncontrolled product according to WHMIS classification criteria |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | C, D1A, D2B   |
| • Dibutyl phthalate                        | 84-74-2    | D2A (listed under n-Dibutyl phthalate)                          |
| • Diphenylamine                            | 122-39-4   | Uncontrolled product according to WHMIS classification criteria |
| • Zinc                                     | 7440-66-6  | Not Listed  |
| • Nitrate cellulose                        | 9004-70-0  | B4, F   |

#### Canada - WHMIS - Ingredient Disclosure List

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | 1 %        |
| • Copper                                   | 7440-50-8  | 1 %        |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | 1 %        |
| • Dibutyl phthalate                        | 84-74-2    | 1 %        |
| • Diphenylamine                            | 122-39-4   | 0.1 %      |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

### Environment

#### Canada - CEPA - Priority Substances List

|  |            |  |
|--|------------|--|
| • Nitroglycerin                            | 55-63-0    | Not Listed   |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed   |
| • Carbon                                   | 7440-44-0  | Not Listed   |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed   |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed   |
| • Copper                                   | 7440-50-8  | Not Listed   |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed   |
| • Dibutyl phthalate                        | 84-74-2    | Priority Substance List 1 (substance not considered toxic) |
| • Diphenylamine                            | 122-39-4   | Not Listed   |
| • Zinc                                     | 7440-66-6  | Not Listed   |

|                     |           |            |
|---------------------|-----------|------------|
| • Nitrate cellulose | 9004-70-0 | Not Listed |
|---------------------|-----------|------------|

## United States

### Labor

#### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

|  |            |  |
|--|------------|--|
| • Nitroglycerin                            | 55-63-0    | Not Listed                                 |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed                                 |
| • Carbon                                   | 7440-44-0  | Not Listed                                 |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed                                 |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed                                 |
| • Copper                                   | 7440-50-8  | Not Listed                                 |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed                                 |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed                                 |
| • Diphenylamine                            | 122-39-4   | Not Listed                                 |
| • Zinc                                     | 7440-66-6  | Not Listed                                 |
| • Nitrate cellulose                        | 9004-70-0  | 2500 lb TQ (concentration >12.6% Nitrogen) |

#### U.S. - OSHA - Specifically Regulated Chemicals

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |
| • Copper                                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed |
| • Diphenylamine                            | 122-39-4   | Not Listed |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

### Environment

#### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |
| • Copper                                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed |
| • Diphenylamine                            | 122-39-4   | Not Listed |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

#### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

|  |            |   |
|--|------------|---|
| • Nitroglycerin                            | 55-63-0    | 10 lb final RQ; 4.54 kg final RQ  |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed  |
| • Carbon                                   | 7440-44-0  | Not Listed  |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed  |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | 10 lb final RQ; 4.54 kg final RQ<br>5000 lb final RQ (no reporting of releases of this hazardous substance is required if the |

|                            |            |   |
|----------------------------|------------|---|
| • Copper                   | 7440-50-8  | diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)  |
| • Barium(II) nitrate (1:2) | 10022-31-8 | Not Listed  |
| • Dibutyl phthalate        | 84-74-2    | 10 lb final RQ; 4.54 kg final RQ  |
| • Diphenylamine            | 122-39-4   | Not Listed  |
|                            |            | 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm) |
| • Zinc                     | 7440-66-6  |   |
|                            |            |   |
| • Nitrate cellulose        | 9004-70-0  | Not Listed  |

#### U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |
| • Copper                                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed |
| • Diphenylamine                            | 122-39-4   | Not Listed |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

#### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |
| • Copper                                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed |
| • Diphenylamine                            | 122-39-4   | Not Listed |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

#### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |

|                            |            |            |
|----------------------------|------------|------------|
| • Copper                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2) | 10022-31-8 | Not Listed |
| • Dibutyl phthalate        | 84-74-2    | Not Listed |
| • Diphenylamine            | 122-39-4   | Not Listed |
| • Zinc                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose        | 9004-70-0  | Not Listed |

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

|  |            |  |
|--|------------|--|
| • Nitroglycerin                            | 55-63-0    | 1.0 % de minimis concentration                     |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed   |
| • Carbon                                   | 7440-44-0  | Not Listed   |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed   |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | 0.1 % de minimis concentration                     |
| • Copper                                   | 7440-50-8  | 1.0 % de minimis concentration                     |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed   |
| • Dibutyl phthalate                        | 84-74-2    | 1.0 % de minimis concentration                     |
| • Diphenylamine                            | 122-39-4   | 1.0 % de minimis concentration                     |
| • Zinc                                     | 7440-66-6  | 1.0 % de minimis concentration (dust or fume only) |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed   |

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

|  |            |            |
|--|------------|------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed |
| • Carbon                                   | 7440-44-0  | Not Listed |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed |
| • Copper                                   | 7440-50-8  | Not Listed |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed |
| • Diphenylamine                            | 122-39-4   | Not Listed |
| • Zinc                                     | 7440-66-6  | Not Listed |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed |

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

|  |            |                                 |
|--|------------|---------------------------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed                      |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed                      |
| • Carbon                                   | 7440-44-0  | Not Listed                      |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed                      |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | carcinogen, initial date 7/1/88 |
| • Copper                                   | 7440-50-8  | Not Listed                      |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed                      |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed                      |
| • Diphenylamine                            | 122-39-4   | Not Listed                      |
| • Zinc                                     | 7440-66-6  | Not Listed                      |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed                      |

**U.S. - California - Proposition 65 - Developmental Toxicity**

|  |            |  |
|--|------------|--|
| • Nitroglycerin                            | 55-63-0    | Not Listed                                   |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed                                   |
| • Carbon                                   | 7440-44-0  | Not Listed                                   |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed                                   |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed                                   |
| • Copper                                   | 7440-50-8  | Not Listed                                   |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed                                   |
| • Dibutyl phthalate                        | 84-74-2    | developmental toxicity, initial date 12/2/05 |
| • Diphenylamine                            | 122-39-4   | Not Listed                                   |
| • Zinc                                     | 7440-66-6  | Not Listed                                   |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed                                   |

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

|  |            |                 |
|--|------------|-----------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed      |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed      |
| • Carbon                                   | 7440-44-0  | Not Listed      |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed      |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed      |
| • Copper                                   | 7440-50-8  | Not Listed      |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed      |
| • Dibutyl phthalate                        | 84-74-2    | 8.7 µg/day MADL |
| • Diphenylamine                            | 122-39-4   | Not Listed      |
| • Zinc                                     | 7440-66-6  | Not Listed      |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed      |

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

|  |            |               |
|--|------------|---------------|
| • Nitroglycerin                            | 55-63-0    | Not Listed    |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed    |
| • Carbon                                   | 7440-44-0  | Not Listed    |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed    |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | 2 µg/day NSRL |
| • Copper                                   | 7440-50-8  | Not Listed    |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed    |
| • Dibutyl phthalate                        | 84-74-2    | Not Listed    |
| • Diphenylamine                            | 122-39-4   | Not Listed    |
| • Zinc                                     | 7440-66-6  | Not Listed    |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed    |

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

|  |            |  |
|--|------------|--|
| • Nitroglycerin                            | 55-63-0    | Not Listed   |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed   |
| • Carbon                                   | 7440-44-0  | Not Listed   |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed   |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | Not Listed   |
| • Copper                                   | 7440-50-8  | Not Listed   |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed   |
| • Dibutyl phthalate                        | 84-74-2    | female reproductive toxicity, initial date 12/2/05 |
| • Diphenylamine                            | 122-39-4   | Not Listed   |
| • Zinc                                     | 7440-66-6  | Not Listed   |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed   |



**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

|  |            |   |
|--|------------|---|
| • Nitroglycerin                            | 55-63-0    | Not Listed  |
| • 2,4,6-Trinitro-1,3-benzenediol lead salt | 15245-44-0 | Not Listed  |
| • Carbon                                   | 7440-44-0  | Not Listed  |
| • Antimony trisulfide                      | 1345-04-6  | Not Listed  |
| • Toluene, 2,4-dinitro-                    | 121-14-2   | male reproductive toxicity,<br>initial date 8/20/99 |
| • Copper                                   | 7440-50-8  | Not Listed  |
| • Barium(II) nitrate (1:2)                 | 10022-31-8 | Not Listed  |
| • Dibutyl phthalate                        | 84-74-2    | male reproductive toxicity,<br>initial date 12/2/05 |
| • Diphenylamine                            | 122-39-4   | Not Listed  |
| • Zinc                                     | 7440-66-6  | Not Listed  |
| • Nitrate cellulose                        | 9004-70-0  | Not Listed  |

**15.2 Chemical Safety Assessment**

- No Chemical Safety Assessment has been carried out.

**15.3 Other Information**

- **WARNING:** This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Section 16 - Other Information****Relevant Phrases (code & full text)**

- H201 - Explosive; mass explosion hazard
- H272 - May intensify fire; oxidizer
- H300 - Fatal if swallowed
- H301 - Toxic if swallowed
- H302 - Harmful if swallowed
- H310 - Fatal in contact with skin
- H311 - Toxic in contact with skin
- H319 - Causes serious eye irritation
- H330 - Fatal if inhaled
- H331 - Toxic if inhaled
- H341 - Suspected of causing genetic defects.
- H350 - May cause cancer.
- H360Df - May damage the unborn child. Suspected of damaging fertility.
- H361f - Suspected of damaging fertility.
- H372 - Causes damage to organs through prolonged or repeated exposure.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects
- H411 - Toxic to aquatic life with long lasting effects

**Revision Date**

- 10/November/2015

**Preparation Date**

- 25/February/2015

**Disclaimer/Statement of Liability**

- The information herein is given in good faith but no warranty, expressed or implied, is made.

**Key to abbreviations**

NDA = No Data Available