

Safety Data Sheet



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

1.1 Product identifier

- Product Name** • Rifle (Electronically-Fired) Loaded Round
- Synonyms** • Centerfire Rifle Loaded Rounds (Electrically-Fired)
- SDS Number/Grade** • ELECLDRD

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

- Relevant identified use(s)** • Hunting or target shooting

1.3 Details of the supplier of the safety data sheet

- Manufacturer** • Remington Arms
2592 AR HWY 15 N
Lonoke, AR 72086
United States
www.remington.com
- Telephone (General)** • 501-676-3161

1.4 Emergency telephone number

- Manufacturer** • (800) 424-9300 - CHEMTREC
- Manufacturer** • 501-676-3161 - Company Emergency Telephone Number

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
Hazardous to the aquatic environment Chronic 2 - H411

2.2 Label Elements

CLP

WARNING



- Hazard statements** • H204 - Fire or projection hazard
H335 - May cause respiratory irritation
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention** • 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.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- 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.
P391 - Collect spillage.
- 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
Skin Sensitization 1A
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Reproductive Toxicity 1A
Hazards Not Otherwise Classified - Health Hazards - Metal fume fever

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • Fire or projection hazard
May cause an allergic skin reaction
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.
 Contaminated work clothing should not be allowed out of the workplace.
 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 on skin: Wash with plenty of water .
 Specific treatment, see supplemental first aid information.
 Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 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.

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
Copper	CAS:7440-50-8 EC Number:231-159-6	48% TO 53%	NDA	EU CLP: STOT SE 3: Resp. Irrit., H335 OSHA HCS 2012: Comb. Dust; STOT SE 3: Resp. Irrit.	NDA
Zinc	CAS:7440-66-6 EC Number:231-175-3 EU Index:030-001-00-1	17% TO 21%	NDA	EU CLP: Not Classified OSHA HCS 2012: Comb. Dust; Hazard Not Otherwise Classified - Health Hazard - Metal fume fever	NDA
Lead	CAS:7439-92-1 EC Number:231-100-4	10% TO 20%	NDA	EU CLP: Carc. 2, H351 (Inhl); Repr. 1A, H360 (Orl, Inhl); STOT RE 1, H372 (CNS, GI, Orl, Inhl); Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Comb. Dust; Carc. 2 (Inhl); Repr. 1A (Orl, Inhl); STOT RE 1 (CNS, GI, Orl, Inhl)	NDA

Nitroglycerin	CAS: 55-63-0 EC Number: 200-240-8	0% TO 3%	Ingestion/Oral-Rat LD50 • 105 mg/kg Skin-Rabbit LD50 • >280 mg/kg	EU CLP: Annex IV, 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 OSHA HCS 2012: Expl. 1.1; Acute Tox. 3 (Orl); Eye Irrit. 2; Skin Sens. 1	NDA
Toluene, 2,4-dinitro -	CAS: 121-14-2 EC Number: 204-450-0 EU Index: 609-007-00-9	0% TO 1.8%	Ingestion/Oral-Rat LD50 • 268 mg/kg	EU CLP: Annex IV, 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 OSHA HCS 2012: Carc. 2; Muta. 2; Repr. 2; Acute Tox. 3 (Orl)	NDA
Nitrocellulose	CAS: 9004-70-0	< 1%	Ingestion/Oral-Rat LD50 • >5 g/kg	EU CLP: Expl. 1.1, H201 OSHA HCS 2012: Expl. 1.1	NDA
Nickel	CAS: 7440-02-0 EC Number: 231-111-4	< 1%	NDA	EU CLP: Annex VI, Table 3.1: Skin Sens. 1, H317; Carc. 2, H351 (Inhl); STOT RE 1, H372 (Lungs, Orl, Derm, Inhl); Aquatic Chronic 3, H412 OSHA HCS 2012: Flam. Sol. 1; Comb. Dust; Resp. Sens. 1B; Skin Sens. 1A; Carc. 2 (Inhl); STOT RE 2 (Lungs, Orl, Inhl)	NDA
Carbon	CAS: 7440-44-0 EC Number: 231-153-3	< 1%	NDA	EU CLP: Not Classified OSHA HCS 2012: Comb. Dust	NDA
Diphenylamine	CAS: 122-39-4 EC Number: 204-539-4 EU Index: 612-026-00-5	0% TO 0.8%	Ingestion/Oral-Rat LD50 • 1120 mg/kg	EU CLP: 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 OSHA HCS 2012: Comb. Dust; Acute Tox. 4 (Orl); STOT RE 2 (Kidney)	NDA
Dibutyl phthalate	CAS: 84-74-2 EC Number: 201-557-4 EU Index: 607-318-00-4	0% TO 0.8%	Ingestion/Oral-Rat LD50 • 7499 mg/kg Inhalation-Rat LC50 • 4250 mg/m ³ Skin-Rabbit LD50 • >20 mL/kg	EU CLP: Annex IV, Table 3.1: Repr. 1B, H360Df (Orl); Aquatic Acute 1, H400 (M=1) OSHA HCS 2012: Repr. 1B (Orl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (Orl, Inhl)	NDA
Antimony	CAS: 7440-36-0 EINECS: 231-146-5	< 0.5%	Ingestion/Oral-Rat LD50 • 100 mg/kg	EU CLP: Acute Tox. 3, H301; Repr. 2, H361d (Derm, Inhl); STOT RE 2, H373 (Lungs, Inhl); Aquatic Chronic 2, H411 OSHA HCS 2012: Comb. Dust; Acute Tox. 3 (Orl); Repr. 2 (Derm, Inhl); STOT RE 2 (Lungs, Inhl); Hazard Not Otherwise Classified - Health Hazard - Causes Antimony spots	NDA
Barium	CAS: 7440-39-3 EINECS: 231-149-1	< 0.2%	NDA	EU CLP: Not Classified OSHA HCS 2012: Comb. Dust	NDA
Arsenic	CAS: 7440-38-2 EC Number: 231-148-6 EU Index: 033-001-00-X	< 0.2%	Ingestion/Oral-Rat LD50 • 763 mg/kg	EU CLP: Annex VI, Table 3.1: Acute Tox. 3 *, H331; Acute Tox. 3 *, H301; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Carc. 1A; Acute Tox. 4 (Orl); STOT RE 2 (Liver, Peripheral Nervous System, Bone Marrow)	NDA

2,4,6-Trinitro-1,3-benzenediol lead salt	CAS:15245-44-0 EC Number:239-290-0	< 0.2%	NDA	EU CLP: Annex VI, Table 3.1: Expl. 1.1, H201; Repr. 1A, H360df; Acute Tox. 4, H332; Acute Tox. 4, H302; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Expl. 1.1; Repr. 1A; STOT RE 1 (Liver, Kidney, Blood, Nervous System)	NDA
Aluminum	CAS:7429-90-5 EC Number:231-072-3	< 0.1%	NDA	EU CLP: Community Workplace Exposure Limits OSHA HCS 2012: 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. If signs/symptoms develop, get medical attention.

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. If signs/symptoms develop, get medical attention.

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. Evacuate area. 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	Germany DFG	Germany TRGS	NIOSH	OSHA
	Ceilings	Not established	0.01 ppm Peak; 0.094 mg/m ³ Peak	Not established	Not established	0.2 ppm Ceiling; 2 mg/m ³ Ceiling
				0.01 ppm TWA AGW (The risk of damage to the embryo or fetus can be		

Nitroglycerin (55-63-0)	TWAs	0.05 ppm TWA	Not established	excluded when AGW and BGW values are observed, exposure factor 1); 0.094 mg/m ³ TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 1)	Not established	Not established
	STELs	Not established	Not established	Not established	0.1 mg/m ³ STEL	Not established
	MAKs	Not established	0.01 ppm TWA MAK; 0.094 mg/m ³ TWA MAK	Not established	Not established	Not established
Dibutyl phthalate (84-74-2)	TWAs	5 mg/m ³ TWA	Not established	0.05 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2); 0.58 mg/m ³ TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2)	5 mg/m ³ TWA	5 mg/m ³ TWA
	Ceilings	Not established	0.1 ppm Peak; 1.16 mg/m ³ Peak	Not established	Not established	Not established
	MAKs	Not established	0.05 ppm TWA MAK; 0.58 mg/m ³ TWA MAK	Not established	Not established	Not established
Diphenylamine (122-39-4)	TWAs	10 mg/m ³ TWA	Not established	5 mg/m ³ TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, inhalable fraction, exposure factor 2)	10 mg/m ³ TWA	Not established
	Ceilings	Not established	10 mg/m ³ Peak (inhalable fraction)	Not established	Not established	Not established
	MAKs	Not established	5 mg/m ³ TWA MAK (inhalable fraction)	Not established	Not established	Not established
Aluminum (7429-90-5)	TWAs	1 mg/m ³ TWA (respirable fraction)	Not established	Not established	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
	MAKs	Not established	4 mg/m ³ TWA MAK (dust, inhalable fraction); 1.5 mg/m ³ TWA MAK (dust, respirable fraction)	Not established	Not established	Not established

Barium (7440-39-3)	TWAs	0.5 mg/m3 TWA	Not established	Not established	Not established	Not established
Arsenic (7440-38-2)	TWAs	0.01 mg/m3 TWA	Not established	Not established	Not established	Not established
	Ceilings	Not established	Not established	Not established	0.002 mg/m3 Ceiling (15 min)	Not established
Antimony	TWAs	0.5 mg/m3 TWA	Not established	Not established	0.5 mg/m3 TWA	0.5 mg/m3 TWA
Nickel (7440-02-0)	TWAs	1.5 mg/m3 TWA (inhalable fraction)	Not established	Not established	0.015 mg/m3 TWA	1 mg/m3 TWA
Lead	TWAs	0.05 mg/m3 TWA	Not established	Not established	0.050 mg/m3 TWA	50 µg/m3 TWA
Zinc (7440-66-6)	Ceilings	Not established	0.4 mg/m3 Peak (respirable fraction); 4 mg/m3 Peak (inhalable fraction)	Not established	Not established	Not established
	MAKs	Not established	0.1 mg/m3 TWA MAK (respirable fraction); 2 mg/m3 TWA MAK (inhalable fraction)	Not established	Not established	Not established
Copper (7440-50-8)	TWAs	0.2 mg/m3 TWA (fume)	Not established	Not established	1 mg/m3 TWA (dust and mist); 0.1 mg/m3 TWA (fume)	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dust and mist)
	Ceilings	Not established	0.02 mg/m3 Peak (respirable fraction)	Not established	Not established	Not established
	MAKs	Not established	0.01 mg/m3 TWA MAK (including inorganic copper compounds, respirable fraction)	Not established	Not established	Not established

Exposure Control Notations

ACGIH

- Nitroglycerin (55-63-0): **Skin:** (Skin - potential significant contribution to overall exposure by the cutaneous route)
- Diphenylamine (122-39-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Nickel (7440-02-0): **Carcinogens:** (A5 - Not Suspected as a Human Carcinogen)
- Lead (7439-92-1): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Lead as Lead, inorganic compounds: **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)
- Arsenic (7440-38-2): **Carcinogens:** (A1 - Confirmed Human Carcinogen)
- Barium (7440-39-3): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Aluminum (7429-90-5): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Aluminum as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Germany TRGS

- Nitroglycerin (55-63-0): **Skin:** (skin notation)
- Dibutyl phthalate (84-74-2): **Carcinogens:** (Based on current data, this substance cannot be classified in categories 1-3) | **Developmental Toxins:** (Category 2) | **Reproductive Toxins:** (Category 2) | **Germ Cell Mutagens:** (Based on current data, this substance cannot be classified in categories 1-3)
- Diphenylamine (122-39-4): **Skin:** (skin notation)
- Lead (7439-92-1): **Developmental Toxins:** (Category 1 (bioavailable, metal)) | **Reproductive Toxins:** (Category 3 (bioavailable, metal))

Germany DFG

- Copper (7440-50-8): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)
- Zinc (7440-66-6): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (respirable fraction); no risk to embryo/fetus if exposure limits adhered to (inhalable fraction))
- Nitroglycerin (55-63-0): **Carcinogens:** (Category 3B (could be carcinogenic for man)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to) | **Skin:** (skin notation)
- Dibutyl phthalate (84-74-2): **Carcinogens:** (Category 3B (could be carcinogenic for man)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

- Diphenylamine (122-39-4): **Carcinogens:** (Category 3B (could be carcinogenic for man)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to) | **Skin:** (skin notation)
- Nickel (7440-02-0): **Carcinogens:** (Category 1 (causes cancer in man)) | **Sensitizers:** (respiratory and skin sensitizer (inhalable fraction, respiratory sensitization confirmed for water soluble Nickel compounds only))
- Nickel as Nickel compounds: **Carcinogens:** (Category 1 (causes cancer in man)) | **Sensitizers:** (respiratory and skin sensitizer (inhalable fraction, respiratory sensitization confirmed for water soluble Nickel compounds only))
- Lead (7439-92-1): **Carcinogens:** (Category 2 (considered to be carcinogenic for man))
- Lead as Lead, inorganic compounds: **Carcinogens:** (Category 2 (considered to be carcinogenic for man, as Pb except lead arsenate and lead chromate))
- Antimony (7440-36-0): **Carcinogens:** (Category 2 (considered to be carcinogenic for man))
- Arsenic (7440-38-2): **Carcinogens:** (Category 1 (causes cancer in man))
- Aluminum (7429-90-5): **Pregnancy:** (classification not yet possible (respirable, inhalable, dust))

Exposure Limits Supplemental

ACGIH

- Copper (7440-50-8): **TLV Basis - Critical Effects:** (metal fume fever (fume))
- Copper as Copper compounds: **TLV Basis - Critical Effects:** (gastrointestinal (dust and mist); irritation (dust and mist))
- Nitroglycerin (55-63-0): **TLV Basis - Critical Effects:** (vasodilation)
- Dibutyl phthalate (84-74-2): **TLV Basis - Critical Effects:** (eye and upper respiratory tract irritation; testicular damage)
- Diphenylamine (122-39-4): **TLV Basis - Critical Effects:** (hematologic effects; kidney and liver damage)
- Nickel (7440-02-0): **TLV Basis - Critical Effects:** (dermatitis; pneumoconiosis)
- Lead (7439-92-1): **BEIs:** (30 µg/100 ml Medium: blood Time: not critical Parameter: Lead (Note: Women of child bearing potential, whose blood Pb exceeds 10 µg/dL, are at risk of delivering a child with a blood Pb over the current Centers for Disease Control guideline of 10 µg/dL. If the blood Pb of such children remains elevated, they may be at increased risk of cognitive deficits. The blood Pb of these children should be closely monitored and appropriate steps should be taken to minimize the child's exposure to environmental lead.)) | **TLV Basis - Critical Effects:** (CNS and PNS impairment; hematologic effects)
- Lead as Lead, inorganic compounds: **BEIs:** (30 µg/100 ml Medium: blood Time: not critical Parameter: Lead (Note: Women of child bearing potential, whose blood Pb exceeds 10 µg/dL, are at risk of delivering a child with a blood Pb over the current Centers for Disease Control guideline of 10 µg/dL. If the blood Pb of such children remains elevated, they may be at increased risk of cognitive deficits. The blood Pb of these children should be closely monitored and appropriate steps should be taken to minimize the child's exposure to environmental lead.)) | **TLV Basis - Critical Effects:** (CNS and PNS impairment; hematologic effects)
- Antimony (7440-36-0): **TLV Basis - Critical Effects:** (skin and upper respiratory tract irritation)
- Antimony as Antimony compounds: **TLV Basis - Critical Effects:** (skin and upper respiratory tract irritation)
- Arsenic (7440-38-2): **BEIs:** (35 µg As/L Medium: urine Time: end of workweek Parameter: Inorganic arsenic plus methylated metabolites (background)) | **TLV Basis - Critical Effects:** (lung cancer)
- Barium (7440-39-3): **TLV Basis - Critical Effects:** (eye, gastrointestinal and skin irritation; muscular stimulation)
- Aluminum (7429-90-5): **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
- Aluminum as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)

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

- Wear protective clothing

Environmental Exposure Controls

- 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.

Additional Protection Measures

- 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

TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)

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**

Material Description			
Physical Form	Solid	Appearance/Description	Brass, Copper, and/or Silver/Gray solid with no odor.
Color	Brass, Copper, and/or Silver/Gray.	Odor	No odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	93.3 °C(199.94 °F)	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		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	250 °F(121.1111 °C)	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
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, caustics

10.6 Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Copper (48% TO 53%)	7440 -50- 8	<p>Acute Toxicity: Ingestion/Oral-Mouse TDLo • 108 mg/kg; <i>Behavioral:Tremor</i>; <i>Gastrointestinal:Hypermotility, diarrhea</i>; <i>Gastrointestinal:Nausea or vomiting</i>; Ingestion/Oral-Mouse TDLo • 158 mg/kg; <i>Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis)</i>; Ingestion/Oral-Mouse TDLo • 232 mg/kg; <i>Kidney, Ureter, and Bladder:Changes primarily in glomeruli</i>; <i>Blood:Changes in spleen</i>; <i>Blood:Changes in serum composition (e.g., TP, bilirubin cholesterol)</i>;</p> <p>Multi-dose Toxicity: Ingestion/Oral-Rabbit TDLo • 3 g/kg 60 Day(s)-Continuous; <i>Cardiac:Other changes</i>; <i>Liver:Hepatitis (hepatocellular necrosis), zonal</i>; <i>Related to Chronic Data:Death in the Other Multiple Dose data type field</i>;</p> <p>Reproductive: Ingestion/Oral-Rat TDLo • 1520 µg/kg (22W pre); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</i>; Ingestion/Oral-Rat TDLo • 152 mg/kg (22W pre); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</i>; <i>Reproductive Effects:Specific Developmental Abnormalities:Central nervous system</i>; Ingestion/Oral-Rat TDLo • 1210 µg/kg (35W pre); <i>Reproductive Effects:Effects on Fertility:Pre-implantation mortality</i>; <i>Reproductive Effects:Effects on Fertility:Post-implantation mortality</i>;</p> <p>Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDLo • 10.08 mg/kg 12 Week(s)-Continuous; <i>Tumorigenic:Carcinogenic by RTECS criteria</i>; <i>Lungs, Thorax, or Respiration:Other changes</i></p>
Zinc (17% TO 21%)	7440 -66- 6	<p>Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation;</p> <p>Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDLo • 12.6 mg/kg 46 Week(s)-Continuous; <i>Tumorigenic:Carcinogenic by RTECS criteria</i>; <i>Gastrointestinal:Tumors</i>; <i>Tumorigenic:Facilitates action of known carcinogen</i></p>
Nitroglycerin (0% TO 3%)	55- 63-0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 105 mg/kg; <i>Behavioral:Somnolence (general depressed activity)</i>; Ingestion/Oral-Woman TDLo • 5 mg/kg; <i>Behavioral:General anesthetic</i>; <i>Cardiac:Other changes</i>; <i>Kidney, Ureter, and Bladder:Incontinence</i>; Skin-Rabbit LD50 • >280 mg/kg;</p> <p>Irritation: Eye-Rabbit • 0.1 mL; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation;</p> <p>Reproductive: Skin-Rat TDLo • 3640 mg/kg (17-21D preg/21D post); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</i>; <i>Reproductive Effects:Effects on Newborn:Viability index (e.g., # alive at day 4 per # born alive)</i>;</p> <p>Tumorigen / Carcinogen: Ingestion/Oral-Rat TDLo • 240170 mg/kg 2 Year(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria</i>; <i>Liver:Tumors</i>; <i>Tumorigenic:Increased incidence of tumors in susceptible strains</i></p>
Nitrocellulose (< 1%)	9004 -70- 0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • >5 g/kg</p>
Dibutyl phthalate (0% TO 0.8%)	84- 74-2	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 7499 mg/kg; Ingestion/Oral-Human TDLo • 140 mg/kg; <i>Behavioral:Hallucinations, distorted perceptions</i>; <i>Gastrointestinal:Nausea or vomiting</i>; <i>Kidney, Ureter, and Bladder:Other changes</i>; Ingestion/Oral-Rat TDLo • 52 mg/kg; <i>Behavioral:Somnolence (general depressed activity)</i>; <i>Lungs, Thorax, or Respiration:Dyspnea</i>; <i>Lungs, Thorax, or Respiration:Respiratory depression</i>; Inhalation -Mouse LC50 • 25 g/m³ 2 Hour(s); Skin-Rabbit LD50 • >20 mL/kg;</p> <p>Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 3750 mg/kg 15 Day(s)-Intermittent; <i>Endocrine:Evidence of thyroid hypofunction</i>; Ingestion/Oral-Rat TDLo • 7500 mg/kg 15 Day(s)-Intermittent; <i>Liver:Changes in liver weight</i>; <i>Endocrine:Evidence of thyroid hypofunction</i>;</p> <p>Reproductive: Ingestion/Oral-Rat TDLo • 23 mg/kg (15-22D preg/15D post); <i>Reproductive Effects:Specific Developmental Abnormalities:Urogenital system</i>; Ingestion/Oral-Rat TDLo • 3500 mg/kg (13-19D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Endocrine system</i>; Ingestion/Oral-Rat TDLo • 4000 mg/kg (6-15D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</i>; Ingestion/Oral-Rat TDLo • 5000 mg/kg (14-18D preg); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetal death</i></p>
		<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 1120 mg/kg; <i>Behavioral:Somnolence (general depressed activity)</i>; <i>Lungs, Thorax, or Respiration:Respiratory depression</i>; <i>Blood:Metheinglobincinia-Carboxyhemoglobin</i>; Skin-</p>

Diphenylamine (0% TO 0.8%)	122-39-4	<p>Rabbit LD50 • >5000 mg/kg; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 25 mg/kg 30 Day(s)-Intermittent; <i>Gastrointestinal:Alteration in gastric secretion; Kidney, Ureter, and Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis); Kidney, Ureter, and Bladder:Proteinuria;</i> Ingestion/Oral-Rat TDLo • 2400 mg/kg 3 Day(s)-Intermittent; <i>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;</i> Reproductive: Ingestion/Oral-Rat TDLo • 7500 mg/kg (17-22D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Urogenital system</i></p>
Toluene, 2,4-dinitro- (0% TO 1.8%)	121-14-2	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 268 mg/kg; Irritation: Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 273 mg/kg 70 Day(s)-Intermittent; <i>Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</i> Mutagen: <i>Unscheduled DNA synthesis • Ingestion/Oral-Rat • 35 mg/kg; Micronucleus test • Ingestion/Oral-Rat • 150 mg/kg 2 Day(s)-Intermittent;</i> Reproductive: Ingestion/Oral-Rat TDLo • 2380 mg/kg (70D male); <i>Reproductive Effects:Paternal Effects:Spermatogenesis; Reproductive Effects:Paternal Effects:Prostate, seminal vesicle, Cowper's gland, accessory glands;</i> Ingestion/Oral-Rat TDLo • 8463 mg/kg (13W male); <i>Reproductive Effects:Paternal Effects:Spermatogenesis;</i> Tumorigen / Carcinogen: Ingestion/Oral-Mouse TDLo • 10080 mg/kg 2 Year(s)-Continuous; <i>Tumorigenic:Carcinogenic by RTECS criteria; Kidney, Ureter, and Bladder:Kidney tumors;</i> Ingestion/Oral-Rat TDLo • 2620 mg/kg 78 Week(s)-Continuous; <i>Tumorigenic:Neoplastic by RTECS criteria; Skin and Appendages:Other:Tumors</i></p>
Nickel (< 1%)	7440-02-0	<p>Acute Toxicity: Ingestion/Oral-Rat TDLo • 200 mg/kg; <i>Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain; Behavioral:Somnolence (general depressed activity);</i> Multi-dose Toxicity: Ingestion/Oral-Mouse TDLo • 500 mg/kg 5 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Related to Chronic Data:Death in the Other Multiple Dose data type field;</i> Inhalation-Rabbit TCLo • 1 mg/m³ 6 Hour(s) 13 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Changes in lung weight; Blood:Hemorrhage;</i> Inhalation-Rat TCLo • 0.4 mg/m³ 40 Week(s)-Intermittent; <i>Vascular:Thrombosis distant from injection site; Lungs, Thorax, or Respiration:Other changes; Related to Chronic Data:Death in the Other Multiple Dose data type field;</i> Reproductive: Ingestion/Oral-Rat TDLo • 158 mg/kg (multigenerations); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Effects on Embryo or Fetus:Fetal death;</i> Tumorigen / Carcinogen: Inhalation-Guinea Pig TCLo • 15 mg/m³ 91 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration:Tumors; Lungs, Thorax, or Respiration:Bronchiogenic carcinoma</i></p>
Lead (10% TO 20%)	7439-92-1	<p>Acute Toxicity: Ingestion/Oral-Woman TDLo • 450 mg/kg 6 Year(s); <i>Peripheral Nerve and Sensation:Flaccid paralysis without anesthesia (usually neuromuscular blockage); Behavioral:Hallucinations, distorted perceptions; Behavioral:Muscle weakness;</i> Inhalation-Human TCLo • 10 µg/m³; <i>Gastrointestinal:Gastritis; Liver:Other changes;</i> Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 43.75 mg/kg 1 Week(s)-Continuous; <i>Blood:Other changes; Kidney, Ureter, and Bladder:Other changes in urine composition; Biochemical:Metabolism (intermediary):Porphyrin, including bile pigments;</i> Inhalation-Human TCLo • 0.011 mg/m³ 26 Week(s)-Intermittent; <i>Brain and Coverings:Other degenerative changes;</i> Inhalation-Man TCLo • 0.03 mg/m³ 5 Year(s)-Intermittent; <i>Endocrine:Androgenic;</i> Inhalation-Man TCLo • 0.109 mg/m³ 5 Year(s)-Intermittent; <i>Reproductive Effects:Paternal Effects:Spermatogenesis;</i> Mutagen: Cytogenetic analysis • Ingestion/Oral-Monkey • 42 mg/kg 30 Week(s); Cytogenetic analysis • Inhalation-Rat • 23 µg/m³ 16 Week(s); Reproductive: Ingestion/Oral-Rat TDLo • 790 mg/kg (multigenerations); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Effects on Embryo or Fetus:Fetal death;</i> Inhalation-Rat TCLo • 10 mg/m³ 24 Hour(s)(1-21D preg); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Specific Developmental Abnormalities:Blood and lymphatic system</i></p>
Antimony (< 0.5%)	7440-36-0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 100 mg/kg; Inhalation-Human TCLo • 10 mg/m³ 8 Hour(s); <i>Behavioral:Muscle weakness; Gastrointestinal:Nausea or vomiting; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Body temperature increase;</i> Inhalation-Human TCLo • 13.5 mg/m³ 4 Hour(s); <i>Sense Organs and Special Senses:Olfaction:Other changes; Blood:Hemorrhage;</i> Tumorigen / Carcinogen: Inhalation-Rat TCLo • 50 mg/m³ 7 Hour(s) 52 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i></p>
		<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 763 mg/kg; <i>Behavioral:Ataxia; Gastrointestinal:Hypermotility, diarrhea;</i></p>

Arsenic (< 0.2%)	7440 -38- 2	<p>Mutagen: Cytogenetic analysis • Ingestion/Oral-Human • 0.211 mg/L 15 Year(s); Cytogenetic analysis • Ingestion/Oral-Mouse • 280 mg/kg 8 Week(s);</p> <p>Reproductive: Ingestion/Oral-Mouse TDLo • 187 mg/kg (8-18D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Hepatobiliary system</i>; Ingestion/Oral-Rat TDLo • 580 µg/kg (30W pre/1-20D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system</i>; Ingestion/Oral-Rat TDLo • 605 µg/kg (35W pre); <i>Reproductive Effects:Effects on Fertility:Pre-implantation mortality</i>; <i>Reproductive Effects:Effects on Fertility:Post-implantation mortality</i></p>
Barium (< 0.2%)	7440 -39- 3	<p>Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 26622 mg/kg 69 Week(s)-Continuous; <i>Vascular:BP elevation not characterized in autonomic section</i>; <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Cytochrome oxidases (including oxidative phosphorylation)</i>; <i>Biochemical:Metabolism (intermediary):Xanthine, purine, or nucleotides including urate</i></p>

GHS Properties	Classification
Acute toxicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin corrosion/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Serious eye damage/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Skin sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Skin Sensitizer 1A
Respiratory sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Aspiration Hazard	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Carcinogenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking
Toxicity for Reproduction	EU/CLP • Data lacking OSHA HCS 2012 • Toxic to Reproduction 1A
STOT-SE	EU/CLP • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
STOT-RE	EU/CLP • Data lacking OSHA HCS 2012 • 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
- Other**
- Chronic (Delayed)**
 - When the ammunition is fired, a small amount of particles may be generated. The particles may contain trace amounts of these harmful substances: Inhalation of high concentrations of metallic copper dusts or fumes may cause nasal irritation and/or nausea, vomiting and stomach pain. Chronic exposure to lead can cause kidney damage, anemia, reproductive effects, developmental effects and permanent nervous system damage in humans including changes in cognitive function.
- 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	NTP
Toluene, 2,4-dinitro-	121-14-2	Group 2B-Possible Carcinogen	Not Listed
Arsenic	7440-38-2	Group 1-Carcinogenic	Known Human Carcinogen
Nickel	7440-02-0	Group 2B-Possible Carcinogen	Reasonably Anticipated to be Human Carcinogen
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen

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

11.2 Other information

- 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.

Key to abbreviations

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

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Rifle (Electronically-Fired) Loaded Round	NDA	<p>Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Osteichthyes (Bony Fishes)</i> 0.0051 mg/L Comments: Copper (7440-50-8) 7 Day(s) NOEC <i>Salmo trutta (Brown Trout)</i> 0.0075 mg/L Comments: Copper (7440-50-8) 96 Hour(s) LC50 <i>Cyprinus carpio (Common Carp)</i> 0.4 mg/L Comments: Lead (7439-92-1) 28 Day(s) NOEC <i>Cyprinus carpio (Common Carp)</i> 0.00003 mg/L Comments: Lead (7439-92-1) 4 Day(s) LC50 <i>Bluegill</i> 0.87-3.25 mg/L Comments: Nitroglycerin (55-63-0) 96 Hour(s) LC50 <i>Channel Catfish (Ictalurus punctatus)</i> 0.46 mg/L Comments: Dibutyl phthalate (84-74-2) 96 Hour(s) LC50 <i>Cyprinodon variegatus (Sheepshead Minnow)</i> 6.2 mg/L Comments: Antimony (7440-36-0) 96 Hour(s) LC50 <i>Oncorhynchus mykiss (Rainbow Trout)</i> 0.06 mg/L Comments: Nickel (7440-02-0) 28 Day(s) NOEC <i>Cyprinus carpio (Common Carp)</i> 0.0035 µg/L Comments: Nickel (7440-02-0)</p> <p>Aquatic Toxicity-Crustacea: 7 Day(s) NOEC <i>Americamysis bahia (Opossum Shrimp)</i> 0.213 mg/L Comments: Nickel (7440-02-0) 2 Day(s) EC50 <i>Water flea</i> 3.8-55 mg/L Comments: Nitroglycerin (55-63-0) 7 Day(s) NOEC <i>Daphnia magna (Water Flea)</i> 3.9 mg/L Comments: Antimony (7440-36-0) 21 Day(s) NOEC <i>Water flea (Daphnia magna)</i> 0.5 mg/L Comments: Dibutyl phthalate (84-74-2) 21 Day(s) NOEC <i>Zebra Danio (Danio rerio)</i> 0.025 mg/L Comments: Dibutyl phthalate (84-74-2)</p>

48 Hour(s) EC50 *Water flea (Daphnia magna)* 2.99 mg/L Comments: Dibutyl phthalate (84-74-2)
 28 Day(s) NOEC *Hyalella azteca (Scud)* 0.006 mg/L Comments: Lead (7439-92-1)
 21 Day(s) NOEC *Daphnia magna (Water Flea)* 0.002 mg/L Comments: Copper (7440-50-8)
 48 Hour(s) EC50 *Ceriodaphnia dubia (Water Flea)* 0.001 mg/L Comments: Copper (7440-50-8)
Aquatic Toxicity-Algae and Other Aquatic Plant(s): 48 Hour(s) EC50 *Chlorella sp. (Green Algae)* 0.0011 mg/L Comments: Copper (7440-50-8)
 7 Day(s) NOEC *Laminaria saccharina (Tangleweed, Brown Algae)* 0.01 mg/L Comments: Copper (7440-50-8)
 72 Hour(s) EC50 *Chaetoceros sp. (Diatom)* 0.105 mg/L Comments: Lead (7439-92-1)
 EC50 *Green Algae (Scenedesmus acutus var. acutus)* 0.21 mg/L Comments: Dibutyl phthalate (84-74-2)
 4 Day(s) EC50 *Green Algae* 0.1-1.3 mg/L Comments: Nitroglycerin (55-63-0)
 96 Hour(s) EC50 *Pseudokirchneriella subcapitata (Green Algae)* 0.233 mg/L Comments: Nickel (7440-02-0)

- Toxic to aquatic life with long lasting effects.

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 for this material.

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	UN0012	Cartridges, small arms	1.4S	II	NDA
	NDA	Cartridges, small arms	ORM-D	NDA	NDA
TDG	UN0012	CARTRIDGES, SMALL ARMS	1.4S	II	NDA
IMO/IMDG	UN0012	CARTRIDGES, SMALL ARMS	1.4S	NDA	NDA
IATA/ICAO	UN0012	Cartridges, small arms	1.4S	NDA	NDA

14.6 Special precautions for user

- None specified.

14.7 Transport in bulk according to Annex II of

- Data lacking.

MARPOL 73/78 and the IBC Code

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)

State Right To Know				
Component	CAS	MA	NJ	PA
2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Yes	Yes	No
Aluminum	7429-90-5	Yes	Yes	Yes
Antimony	7440-36-0	Yes	Yes	Yes
Arsenic	7440-38-2	Yes	Yes	Yes
Barium	7440-39-3	Yes	Yes	Yes
Carbon	7440-44-0	No	No	No
Copper	7440-50-8	Yes	Yes	Yes
Dibutyl phthalate	84-74-2	Yes	Yes	Yes
Diphenylamine	122-39-4	Yes	Yes	Yes
Lead	7439-92-1	Yes	Yes	Yes
Nickel	7440-02-0	Yes	Yes	Yes
Nitrocellulose	9004-70-0	Yes	Yes	Yes
Nitroglycerin	55-63-0	Yes	Yes	Yes
Toluene, 2,4-dinitro-	121-14-2	Yes	Yes	Yes
Zinc	7440-66-6	Yes	Yes	Yes

Inventory				
Component	CAS	EU EINECS	EU ELNICS	TSCA
2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Yes	No	Yes
Aluminum	7429-90-5	Yes	No	Yes
Antimony	7440-36-0	Yes	No	Yes
Arsenic	7440-38-2	Yes	No	Yes
Barium	7440-39-3	Yes	No	Yes
Carbon	7440-44-0	Yes	No	Yes
Copper	7440-50-8	Yes	No	Yes
Dibutyl phthalate	84-74-2	Yes	No	Yes
Diphenylamine	122-39-4	Yes	No	Yes
Lead	7439-92-1	Yes	No	Yes
Nickel	7440-02-0	Yes	No	Yes
Nitrocellulose	9004-70-0	No	No	Yes
Nitroglycerin	55-63-0	Yes	No	Yes

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

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Nitroglycerin	55-63-0	T+; R26/27/28 E; R3 R33 N; R51-53
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Xn; R20/22 E; R3 R33 N; R50-53 Repr.Cat.1; R61 Repr.Cat.3; R62
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	T; R23/24/25 Carc.Cat.2; R45 Xn; R48/22 N; R50-53 Repr.Cat.3; R62 Muta.Cat.3; R68
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	N; R50 Repr.Cat.2; R61 Repr.Cat.3; R62
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	T; R23/25 N; R50-53
• Diphenylamine	122-39-4	T; R23/24/25 R33 N; R50-53
• Aluminum	7429-90-5	F; R11-15
• Nickel	7440-02-0	Carc.Cat.3; R40 R43 T; R48/23
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	E; R3

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Nitroglycerin	55-63-0	E T+ N R:3-26/27/28-33-51/53 S:(1/2)-33-35-36/37-45-61
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	E T N R:61-3-20/22-33-50/53-62 S:53-45-60-61
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed

• Toluene, 2,4-dinitro-	121-14-2	T N R:45-23/24/25-48/22-62-68-50/53 S:53-45-60-61
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	T N R:61-50-62 S:53-45-61
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	T N R:23/25-50/53 S:(1/2)-20/21-28-45-60-61
• Diphenylamine	122-39-4	T N R:23/24/25-33-50/53 S:(1/2)-28-36/37-45-60-61
• Aluminum	7429-90-5	F R:11-15 S:(2)-7/8-43
• Nickel	7440-02-0	T R:40-43-48/23 S:(2)-36/37/39-45
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	E R:3 S:(2)-35

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	E, 1
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	E
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	T
• Nickel	7440-02-0	S, 7
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	T

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

• Nitroglycerin	55-63-0	S:(1/2)-33-35-36/37-45-61
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	S:53-45-60-61
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	S:53-45-60-61
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	S:53-45-61
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	S:(1/2)-20/21-28-45-60-61
• Diphenylamine	122-39-4	S:(1/2)-28-36/37-45-60-61
• Aluminum	7429-90-5	S:(2)-7/8-43
• Nickel	7440-02-0	S:(2)-36/37/39-45
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	S:(2)-35

United States

Labor

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

• Nitroglycerin	55-63-0	Not Listed
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• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA (See 29 CFR 1910.1025)
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	10 lb final RQ; 4.54 kg final RQ 5000 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); 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)
• Copper	7440-50-8	10 lb final RQ; 4.54 kg final RQ 10 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); 4.54 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)
• Dibutyl phthalate	84-74-2	10 lb final RQ; 4.54 kg final RQ 10 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); 4.54 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)
• Lead	7439-92-1	5000 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); 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)
• Antimony	7440-36-0	1 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); 0.454 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)
• Arsenic	7440-38-2	100 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); 45.4 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)
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	100 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); 45.4 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)

		hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
		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	
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed

• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	1.0 % de minimis concentration
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	0.1 % de minimis concentration
• Copper	7440-50-8	1.0 % de minimis concentration
• Dibutyl phthalate	84-74-2	1.0 % de minimis concentration
• Lead	7439-92-1	0.1 % Supplier notification limit; 0.1 % de minimis concentration (when contained in stainless steel, brass, or bronze)
• Antimony	7440-36-0	1.0 % de minimis concentration
• Arsenic	7440-38-2	0.1 % de minimis concentration
• Diphenylamine	122-39-4	1.0 % de minimis concentration
• Aluminum	7429-90-5	1.0 % de minimis concentration (dust or fume only)
• Nickel	7440-02-0	0.1 % de minimis concentration
• Zinc	7440-66-6	1.0 % de minimis concentration (dust or fume only)
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	100 lb RT (this lower threshold does not apply to lead when it is contained in stainless steel,

• Antimony	7440-36-0	brass or bronze alloy) Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII		
• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Included in waste stream: F039
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Included in waste streams: F039, K025, K111
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Included in waste stream: F039
• Lead	7439-92-1	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176
• Antimony	7440-36-0	Included in waste streams: F039, K021, K161, K177
• Arsenic	7440-38-2	Included in waste streams: F032, F034, F035, F039, K031, K060, K084, K101, K102, K161, K171, K172, K176
• Diphenylamine	122-39-4	Included in waste streams: F039, K083, K104
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Included in waste streams: F006, F039
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring		
• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	(total)
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	(total)
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	(total)
• Antimony	7440-36-0	(total)
• Arsenic	7440-38-2	(total)
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	(total)
• Zinc	7440-66-6	(total)
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	100.0 mg/L regulatory level
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	0.13 mg/L regulatory level
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	5.0 mg/L regulatory level
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	5.0 mg/L regulatory level
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

• Nitroglycerin	55-63-0	waste number P081
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	hazardous constituent - no waste number
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	waste number U105
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	waste number U069
• Lead	7439-92-1	hazardous constituent - no waste number
• Antimony	7440-36-0	hazardous constituent - no waste number
• Arsenic	7440-38-2	hazardous constituent - no waste number
• Diphenylamine	122-39-4	hazardous constituent - no waste number
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	hazardous constituent - no waste number
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	(total)
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	
• Copper	7440-50-8	(total)
• Dibutyl phthalate	84-74-2	
• Lead	7439-92-1	(total)
• Antimony	7440-36-0	(total)
• Arsenic	7440-38-2	(total)
• Diphenylamine	122-39-4	
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	(total)

• Zinc	7440-66-6	(total)
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - P Series Wastes - Acutely Toxic Wastes

• Nitroglycerin	55-63-0	waste number P081 (Reactive waste)
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	1.2 mg/L (wastewater); 21 mg/L TCLP (nonwastewater)
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	0.32 mg/L (wastewater); 140 mg/kg (nonwastewater)
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	0.057 mg/L (wastewater); 28 mg/kg (nonwastewater)
• Lead	7439-92-1	0.69 mg/L (wastewater); 0.75 mg/L TCLP (nonwastewater)
• Antimony	7440-36-0	1.9 mg/L (wastewater); 1.15 mg/L TCLP (nonwastewater)
• Arsenic	7440-38-2	1.4 mg/L (wastewater); 5.0 mg/L TCLP (nonwastewater)
• Diphenylamine	122-39-4	0.92 mg/L (wastewater); 13 mg/kg (nonwastewater)
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	3.98 mg/L (wastewater); 11.0 mg/L TCLP (nonwastewater)
• Zinc	7440-66-6	2.61 mg/L (wastewater); 4.3 mg/L TCLP (nonwastewater)
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	(total)
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	
• Copper	7440-50-8	(total)
• Dibutyl phthalate	84-74-2	
• Lead	7439-92-1	(total)

• Antimony	7440-36-0	(total)
• Arsenic	7440-38-2	(total)
• Diphenylamine	122-39-4	
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	(total)
• Zinc	7440-66-6	(total)
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	waste number U105
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	waste number U069
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Waste Minimization Priority Chemicals

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	carcinogen, initial date 7/1/88
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed

• Lead	7439-92-1	carcinogen, initial date 10/1/92
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	carcinogen, initial date 10/1/89 (metallic)
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	developmental toxicity, initial date 12/2/05
• Lead	7439-92-1	developmental toxicity, initial date 2/27/87
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	8.7 µg/day MADL
• Lead	7439-92-1	0.5 µg/day MADL
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	2 µg/day NSRL
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	15 µg/day NSRL (oral)

• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	0.06 µg/day NSRL (inhalation); 10 µg/day NSRL (except inhalation)
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	female reproductive toxicity, initial date 12/2/05
• Lead	7439-92-1	female reproductive toxicity, initial date 2/27/87
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	male reproductive toxicity, initial date 8/20/99
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	male reproductive toxicity, initial date 12/2/05
• Lead	7439-92-1	male reproductive toxicity, initial date 2/27/87
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	Not Listed
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	Not Listed
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	9004-70-0	Not Listed

United States - Pennsylvania

Labor		
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List		
• Nitroglycerin	55-63-0	
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed

• Barium	7440-39-3	
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	
• Copper	7440-50-8	(dust and fume)
• Dibutyl phthalate	84-74-2	
• Lead	7439-92-1	
• Antimony	7440-36-0	
• Arsenic	7440-38-2	(inorganic)
• Diphenylamine	122-39-4	
• Aluminum	7429-90-5	
• Nickel	7440-02-0	
• Zinc	7440-66-6	
• Nitrocellulose	9004-70-0	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Nitroglycerin	55-63-0	Not Listed
• 2,4,6-Trinitro-1,3-benzenediol lead salt	15245-44-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Toluene, 2,4-dinitro-	121-14-2	Not Listed
• Copper	7440-50-8	Not Listed
• Dibutyl phthalate	84-74-2	Not Listed
• Lead	7439-92-1	Not Listed
• Antimony	7440-36-0	Not Listed
• Arsenic	7440-38-2	
• Diphenylamine	122-39-4	Not Listed
• Aluminum	7429-90-5	Not Listed
• Nickel	7440-02-0	
• Zinc	7440-66-6	Not Listed
• Nitrocellulose	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
- H300 - Fatal if swallowed
- H301 - Toxic if swallowed
- H302 - Harmful if swallowed
- H310 - Fatal in contact with skin
- H311 - Toxic in contact with skin
- H317 - May cause an allergic skin reaction
- H330 - Fatal if inhaled
- H331 - Toxic if inhaled
- H332 - Harmful if inhaled
- H341 - Suspected of causing genetic defects.
- H350 - May cause cancer.
- H351 - Suspected of causing cancer.
- H360 - May damage fertility or the unborn child.

H360Df - May damage the unborn child. Suspected of damaging fertility.
H361d - Suspected of damaging the unborn child.
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
H412 - Harmful to aquatic life with long lasting effects

Revision Date

Preparation Date

Disclaimer/Statement of Liability

- No data available
- 25/October/2010
- The information contained in this Safety Data Sheet is provided to all individuals who are or will be exposed to this product through use, handling, storage or transport. Remington believes, yet makes no warranty, that all information contained in this document is current as of the date of publication.

Key to abbreviations

NDA = No Data Available