Safety Data Sheet

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

1.1 Product identifier

Product Name • **Shotshell Loaded Round (Lead-Free Frangible)**

Synonyms • Shotshell Buckshot Loaded Rounds; Shotshell Slug Loaded Rounds

SDS Number/Grade • SSLDLFHMFTemp

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

Relevant identified use(s) • Military & Law Enforcement; Civilian Self-Defense

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

Manufacturer • 501-676-3161

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
Acute Toxicity Oral 3 - H301
Acute Toxicity Dermal 1 - H310
Acute Toxicity Inhalation 2 - H330
Hazardous to the aquatic environment Chronic 3 - H412

2.2 Label Elements

CLP

DANGER

Hazard statements
- H204 - Fire or projection hazard
H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H330 - Fatal if inhaled
H412 - Harmful 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.
P260 - Do not breathe dust/fume.
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
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.
P284 - Wear respiratory protection.

Response
- P370+P380 - In case of fire: Evacuate area.
P372 - Explosion risk in case of fire.
P373 - DO NOT fight fire when fire reaches explosives.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302+P350 - IF ON SKIN: Gently wash with plenty of soap and water.
P310 - Immediately call a POISON CENTER or doctor/physician.
P322 - Specific measures, see supplemental first aid information.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330 - Rinse mouth.

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.

Supplemental information
- Dermal Toxicity 69-83 percent of this product consists of an ingredient of unknown toxicity.
Inhalation Toxicity 69-83 percent of this product consists of an ingredient of unknown toxicity.
Oral Toxicity 1.1-11 percent of this product consists of an ingredient of unknown toxicity.

2.3 Other Hazards

CLP
- May form combustible dust concentrations in air.
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
Acute Toxicity Oral 4
Skin Sensitization 1
Combustible Dust

2.2 Label elements

OSHA HCS 2012

WARNING

Hazard statements

- Fire or projection hazard
  Harmful if swallowed
  May cause an allergic skin reaction
  May form combustible dust concentrations in air.

Precautionary statements

Prevention

- 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/fume.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  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.
  Explosion risk in case of fire.
  DO NOT fight fire when fire reaches explosives.
  Fight fire with normal precautions from a reasonable distance.
  If on skin: Wash with plenty of water .
  Specific treatment, see supplemental first aid information.
  If skin irritation or rash occurs: Get medical advice/attention.
  Wash contaminated clothing before reuse.
  IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  Rinse mouth.

Storage/Disposal

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

Supplemental information

- Oral Toxicity 1.1-11 percent of this product consists of an ingredient of unknown toxicity.

2.3 Other hazards

OSHA HCS 2012

- 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 in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments

Iron	**CAS:**7439-89-6 **EC Number:**231-096-4	68% TO 72%	Ingestion/Oral-Rat LD50 • 750 mg/kg	**EU CLP:** Acute Tox. 4, H302; Aquatic Chronic 4, H413 **OSHA HCS 2012:** Acute Tox. 4 (Oral)	NDA
Copper	**CAS:**7440-50-8 **EC Number:**231-159-6	1% TO 8%	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	0.1% TO 3%	NDA	**EU CLP:** Not Classified **OSHA HCS 2012:** Comb. Dust; HNOC Health:Metal fume fever	NDA
Nitroglycerin	**CAS:**55-63-0 **EC Number:**200-240-8	0.3% TO 2.8%	Ingestion/Oral-Rat LD50 • 105 mg/kg Skin-Rabbit LD50 • >280 mg/kg	**EU CLP:** 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
Nitrate cellulose	**CAS:**9004-70-0 **EU Index:**603-037-00-6	< 1%	Ingestion/Oral-Rat LD50 • >5 g/kg	**EU CLP:** Annex VI, Table 3.1: Expl. 1.1, H201 **OSHA HCS 2012:** Expl. 1.1	NDA
Carbon	**CAS:**7440-44-0 **EC Number:**231-153-3	< 1%	NDA	**EU CLP:** Not Classified **OSHA HCS 2012:** Comb. Dust	NDA
Potassium nitrate	**CAS:**7757-79-1 **EC Number:**231-818-8	0% TO 0.1%	Ingestion/Oral-Rat LD50 • 3750 mg/kg	**EU CLP:** Not Classified **OSHA HCS 2012:** Ox. Sol. 3; Acute Tox. 4 (oral); STOT SE 3: Resp. Irrit	NDA
Barium	**CAS:**7440-39-3 **EINECS:**231-149-1	0% TO 0.1%	NDA	**EU CLP:** Not Classified **OSHA HCS 2012:** Comb. Dust	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 130ºC.
  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 orpackaged 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.
  Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

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.

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**
Aluminum (7429-90-5)	TWAs	1 mg/m3 TWA (respirable fraction)	Not established	Not established	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
	MAKs	Not established	4 mg/m3 TWA MAK (dust, inhalable fraction); 1.5 mg/m3 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
Antimony	TWAs	0.5 mg/m3 TWA	Not established	Not established	0.5 mg/m3 TWA	0.5 mg/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
Nitroglycerin (55-63-0)	Ceilings	Not established	0.01 ppm Peak; 0.094 mg/m3 Peak	Not established	Not established	0.2 ppm Ceiling; 2 mg/m3 Ceiling
	TWAs	0.05 ppm TWA	Not established	0.01 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 1); 0.094 mg/m3 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/m3 STEL	Not established
	MAKs	Not established	0.01 ppm TWA MAK; 0.094 mg/m3 TWA MAK	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)
- 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)
- Barium (7440-39-3): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Germany TRGS

- Nitroglycerin (55-63-0): **Skin:** (skin notation)

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, inhalable))
- 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)
- Aluminum (7429-90-5): **Pregnancy:** (classification not yet possible (respirable, inhalable, dust))
- Antimony (7440-36-0): **Carcinogens:** (Category 2 (considered to be carcinogenic for man))

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)
- 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)
- 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)
- Barium (7440-39-3): **TLV Basis - Critical Effects:** (eye, gastrointestinal and skin irritation; muscular stimulation)

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 colored metal and a body of various colors with no odor.
Color	Metal: Brass, Copper and/or Silver/Gray; Body: Various.	Odor	Odorless
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	130 °C(266 °F)
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	130 °C(266 °F)	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 (266ºF or 130ºC, 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 (1% TO 8%)	7440-50-8	**Acute Toxicity:** Ingestion/Oral-Mouse TDLo • 108 mg/kg; *Behavioral*:**Tremor**; *Gastrointestinal*:**Hypermotility, diarrhea**; *Gastrointestinal*:**Nausea or vomiting**; Ingestion/Oral-Mouse TDLo • 158 mg/kg; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; Ingestion/Oral-Mouse TDLo • 232 mg/kg; *Kidney, Ureter, and Bladder*:**Changes primarily in glomeruli**; *Blood*:**Changes in spleen**; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; **Multi-dose Toxicity:** Ingestion/Oral-Rabbit TDLo • 3 g/kg 60 Day(s)-Continuous; *Cardiac*:**Other changes**; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**; **Reproductive:** Ingestion/Oral-Rat TDLo • 1520 µg/kg (22W pre); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; Ingestion/Oral-Rat TDLo • 1210 µg/kg (35W pre); *Reproductive Effects:Effects on Fertility*:**Pre-implantation mortality**; *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 10.08 mg/kg 12 Week(s)-Continuous; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Lungs, Thorax, or Respiration*:**Other changes**
Zinc (0.1% TO 3%)	7440-66-6	**Irritation:** Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 12.6 mg/kg 46 Week(s)-Continuous; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Gastrointestinal*:**Tumors**; *Tumorigenic*:**Facilitates action of known carcinogen**
Nitroglycerin (0.3% TO 2.8%)	55-63-0	**Acute Toxicity:** Ingestion/Oral-Woman TDLo • 5 mg/kg; *Behavioral*:**General anesthetic**; *Cardiac*:**Other changes**; *Kidney, Ureter, and Bladder*:**Incontinence**; Skin-Rabbit LD50 • >280 mg/kg; **Irritation:** Eye-Rabbit • 0.1 mL; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; **Reproductive:** Skin-Rat TDLo • 3640 mg/kg (17-21D preg/21D post); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Effects on Newborn*:**Viability index (e.g., # alive at day 4 per # born alive)**; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 240170 mg/kg 2 Year(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Liver*:**Tumors**; *Tumorigenic*:**Increased incidence of tumors in susceptible strains**
Nitrate cellulose (< 1%)	9004-70-0	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • >5 g/kg
Potassium nitrate (0% TO 0.1%)	7757-79-1	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3540 mg/kg; *Lungs, Thorax, or Respiration*:**Other changes**; *Liver*:**Other changes**; *Kidney, Ureter, and Bladder*:**Other changes**; Ingestion/Oral-Rat TDLo • 10 mg/kg; *Blood*:**Metheinoglobincinia-Carboxyhemoglobin**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 2250 mg/kg 150 Day(s)-Intermittent; *Endocrine*:**Thyroid weight (goiter)**; *Endocrine*:**Evidence of thyroid hypofunction**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Reproductive:** Ingestion/Oral-Rabbit TDLo • 6505 mg/kg (23-27D preg); *Reproductive Effects:Effects on Fertility*:**Abortion**
Barium (0% TO 0.1%)	7440-39-3	**Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 26622 mg/kg 69 Week(s)-Continuous; *Vascular*:**BP elevation not characterized in autonomic section**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Cytochrome oxidases (including oxidative phosphorylation)**; *Biochemical:Metabolism (intermediary)*:**Xanthine, purine, or nucleotides including urate**
Iron (68% TO	7439-	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 750 mg/kg; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Transaminases**; Ingestion/Oral-Child TDLo • 77 mg/kg; *Behavioral*:**Irritability**; *Gastrointestinal*:**Nausea or**

72%)	89-6	**vomiting**; *Blood*:**Normocytic anemia**; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 105 mg/kg 5 Week(s)-Continuous; *Liver*:**Tumors**; *Tumorigenic*:**Active as anti-cancer agent**; *Tumorigenic*:**Protects against induction of experimental tumors**

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Acute Toxicity - Dermal 1 - ATEmix (dermal) = 30 mg/kg; Acute Toxicity - Inhalation 2 - ATEmix (inhl) = 0.30 mg/L (4h); Acute Toxicity - Oral 3 - ATEmix (oral) = 136 mg/kg **OSHA HCS 2012** • Acute Toxicity - Oral 4 - ATEmix (oral) = 726 mg/kg
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 1
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** • Data lacking
STOT-SE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)
- Fatal if inhaled. 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)
- Fatal in contact with skin. May cause skin sensitization. Symptoms include redness, and skin rash.

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)
- Toxic if swallowed. Ingestion may cause severe headache, nausea, vomiting, abdominal pain, fatigue, diarrhea, trembling, ringing in ear and salivation.

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**
Potassium nitrate as Nitrate Compounds	NDA	Group 2A-Probable Carcinogen

Key to abbreviations

LD = Lethal Dose

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Shotshell Loaded Round (Lead-Free Frangible)	NDA	**Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Mudskipper (Periophthalmus waltoni)* 0.00648 mg/L Comments: Iron (7439-89-6) 7 Day(s) NOEC *Brown Trout (Salmo trutta)* 0.305 mg/L Comments: Iron (7439-89-6) 4 Day(s) LC50 *Bluegill* 0.87-3.25 mg/L Comments: Nitroglycerin (55-63-0) **Aquatic Toxicity-Crustacea:** 2 Day(s) EC50 *Water flea* 38-55 mg/L Comments: Nitroglycerin (55-63-0) 7 Day(s) NOEC *Aquatic Sowbug, Isopod (Idotea balthica)* 0.5 mg/L Comments: Iron (7439-89-6) **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 4 Day(s) EC50 *Green Algae* 0.1-1.3 mg/L Comments: Nitroglycerin (55-63-0)

- Harmful 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	14.2 UN proper	14.3 Transport hazard	14.4 Packing	14.5 Environmental

	number	shipping name	class(es)	group	hazards
DOT	UN0012	Cartridges, small arms	1.4S	II	NDA
TDG	UN0014	CARTRIDGES, SMALL ARMS	1.4S	II	NDA
IMO/IMDG	UN0012	CARTRIDGES, SMALL ARMS	1.4S	II	NDA
IATA/ICAO	UN0012	Cartridges, small arms	1.4S	II	NDA

14.6 Special precautions for user
- None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications
- Acute, Pressure(Sudden Release of)

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Barium	7440-39-3	Yes	Yes	Yes
Carbon	7440-44-0	No	No	No
Copper	7440-50-8	Yes	Yes	Yes
Iron	7439-89-6	No	No	No
Nitrate cellulose	9004-70-0	Yes	Yes	Yes
Nitroglycerin	55-63-0	Yes	Yes	Yes
Potassium nitrate	7757-79-1	Yes	Yes	Yes
Zinc	7440-66-6	Yes	Yes	Yes

Inventory				
Component	**CAS**	**EU EINECS**	**EU ELNICS**	**TSCA**
Barium	7440-39-3	Yes	No	Yes
Carbon	7440-44-0	Yes	No	Yes
Copper	7440-50-8	Yes	No	Yes
Iron	7439-89-6	Yes	No	Yes
Nitrate cellulose	9004-70-0	No	No	Yes
Nitroglycerin	55-63-0	Yes	No	Yes
Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed

• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	E; R3

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	S:(2)-35

United States

Labor

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed

• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	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)
• Zinc	7440-66-6	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)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	1.0 % de minimis concentration
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	1.0 % de minimis concentration
• Zinc	7440-66-6	1.0 % de minimis concentration (dust or fume only)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

U.S. - EPA - Designated Generic Categories - Nitrate Compounds

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	RR-03804-0
• Nitrate cellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Included in waste stream: F039
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	(total)
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	(total)
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	100.0 mg/L regulatory level
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	hazardous constituent - no waste number
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	(total)

• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	(total)
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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)
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	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
• Barium	7440-39-3	1.2 mg/L (wastewater); 21 mg/L TCLP (nonwastewater)
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	2.61 mg/L (wastewater); 4.3 mg/L TCLP (nonwastewater)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	(total)
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	(total)
• Zinc	7440-66-6	(total)
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed

• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	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
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

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

• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Nitroglycerin	55-63-0	
• Barium	7440-39-3	
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	(dust; fume; metal)

• Zinc	7440-66-6	
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances		
• Nitroglycerin	55-63-0	Not Listed
• Barium	7440-39-3	Not Listed
• Carbon	7440-44-0	Not Listed
• Copper	7440-50-8	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Potassium nitrate	7757-79-1	Not Listed
• Nitrate cellulose	9004-70-0	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H201 - Explosive; mass explosion hazard
  H300 - Fatal if swallowed
  H302 - Harmful if swallowed
  H335 - May cause respiratory irritation
  H373 - May cause damage to organs through prolonged or repeated exposure.
  H411 - Toxic to aquatic life with long lasting effects
  H413 - May cause long lasting harmful effects to aquatic life

Revision Date

- 15/June/2016

Preparation Date

- 10/August/2007

Disclaimer/Statement of Liability

- 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